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SURGICAL PROBLEMS PERTAINING TO SURGERY OF LUNG AND CHEST WALL.

FELIX P. MILLER, M.D., F.A.C.S.
El Paso, Texas.

(Read before the Thirty-seventh Annual Meeting of the Arizona State Medical Association, held at Tucson, Ariz., April 19-21, 1928).

Any operative interference within the thoracic cavity must take into consideration physical conditions that are not encountered in surgery of any other part of the body.

In health, the act of respiration depends chiefly upon the rhythmic expansion and contraction of the chest. Under normal conditions the pleura of the lung and the chest wall are in contact, and a negative pressure is maintained between these layers. Upon entering the free pleural space this condition is at once disturbed, and the effect is manifest upon the lungs, the heart and the mediastinum. This effect will be mild or serious according to the physical condition of the soft pliable membranes that separate these organs. If a non-adherent pleura is entered. the size of the lung is diminished. The seriousness of the symptoms that follow will depend upon the size of the opening in the chest.[1] A certain amount of shock follows this operation, but the flapping of the mediastinum in the to-and-fro motion that follows, produces serious conditions affecting the respiration and the circulation.

The failure of surgeons to appreciate these and other facts regarding the physiology of respiration and physical conditions of the chest, delayed surgical interference in many diseases of the thorax until a comparatively recent date. The early surgeons attempted to make a direct attack upon the diseased condition of the thorax, and the resulting mortality prevented the brilliant results that gave surgery its claims in other fields.

Especially was this true in pulmonary tuberculosis and its complications. Thus the confidence in surgery of the chest was almost lost and the patients and clinicians were doubtful in regard to the success of surgery, when the changed operative technic spoke of the indirect methods of surgical attack upon pulmonary tuberculosis.

Forlanini and Murphy began the indirect surgical attack upon pulmonary tuberculosis by compression of the lung with nitrogen gas and air. This method has been adopted by most physicians engaged in the treatment of pulmonary tuberculosis, until now it has received an established place in therapy.

It is the additional indirect surgical methods of producing compression of the lung that I desire to present to you at this time. These are phrenicotomy, pneumolysis and paravertebral extrapleural thoracoplasty.

These surgical methods should be more widely studied by all who are engaged or interested in the treatment of tuberculosis. The laity and the patient have come to accept the condition as hopeless, and have a preconceived idea that tuberculous patients are bad surgical risks under any circumstances.

The surgical measures named cannot be properly applied without the close cooperation of the internist and the surgeon. Each tuberculous patient should be closely studied and classified according to the pathology found. We must then study the anatomical and biological conditions that prevent the healing of the lesion under observation.

All physicians recognize that rest is one of the most important factors in the healing of the tuberculous patient. All the above indirect surgical operations have this principle in view. The basic idea of collapse therapy is that of rest.

Air compression therapy is used with the view that, after the lesions are healed, the lung may resume its physiological function, while plastic operative collapse therapy decides that physiological function shall never return. Phrenicotomy and pneumolysis are accessory operations that can aid either air compression or thorecoplasty.

The end result of all lines of treatment is the general biologic condition known as

fibrosis and calcification. The study of nature's method of cure shows that these changes produce certain anatomical alterations. The respiratory movements are altered and impaired, while the volume of tidal air is markedly diminished. The shoulder is lowered. The intercostal spaces are smaller, due to approximation of the ribs, and their angulation is increased. The fibrous tissues, by contraction, alter the position of the adjacent viscera. The diaphragm may be adherent, and only slightly movable. It may be drawn upward. The trachea is drawn to one side; the heart, blood vessels and the mediastinum are pulled towards the affected side.

The aim and the idea of collapse therapy is indirect imitation of these natural efforts towards healing. Surgery enables these natural forces to operate more extensively. Frequently the plastic operation allows the collapse to aid the so-called good lung to approach its former natural physiological movement, and, at the same time, relieve the circulation of its altered conditions and embarrassment. The dissemination of the toxic materials from the diseased lung is impeded or prevented. Therefore the general condition of the patient is improved.

The natural cure of tuberculosis in joints shows that rest or immobilization is the essential factor in healing. Immobilization, or forced rest, is the necessary condition to repair in collapse therapy of the lung. The active agents cannot continue to generate and put into the circulation the toxins that produce the complicated disease known as tuberculosis. Naturally the patient's general resistance is increased, and bodily improvement follows.

Karl Schlaepfer[2] has shown that there is a stasis in the lymphatics and in blood vessels. When the lung is put at rest, a similar condition is shown by Bier's passive hyperemia. By this passive congestion, nature causes the production of fibrous tissue, a step in the healing process. And her efforts heal or fail to heal according to the success of these natural factors.

Extrapleural thoracoplasty, in two or more stages, is now performed for unilateral pulmonary tuberculosis under gas oxygen or local anesthesia, with encouraging results.

The cases showing the marked formation of fibrous tissue are the most hopeful in prognosis. They are frequently called the "formative" or the "productive type." While the tall, stout, muscular patient, with an apparently good general condition, and who has not been cured for a long period, is not considered as a good risk.

The pneumonic or caseous or exudative type are not essentially suitable for collapse therapy. This type does not exert traction upon the skeleton nor the viscera as does the fibrous type.

Small blood transfusions have been of decided benefit in preventing shock.

Phrenicotomy is growing in favor as a preliminary operation. A great number of patients will improve and become better operative risks after a phrenicotomy. All remedies used to stop and prevent hemorrhage will be more potent if assisted by rest of the diaphragm.

Patients that are not essentially unilateral will improve in general health after a phrenicotomy. It may be used to test the ability of the so-called good lung to carry an increase of the respiratory function. It is of decided benefit in cases of tuberculosis at the base of the lung. It is indicated in those cases of artificial pneumothorax which require frequent refills and where, for economical or business reasons, the services of those skilled in the use of artificial pneumothorax cannot be obtained. By diminishing the size of the chest cavity, it will benefit cases in which the termination of artificial pneumothorax is considered, where there is apprehension that final expansion will not be safe in a normal sized chest. It is believed that the operation will lessen the dangers of artificial pneumothorax, especially the formation of fluid, and, at times, empyema. It may prove of service in preventing spontaneous pneumothorax.

There is a growing opinion that phrenicotomy previous to thoracoplasty prevents inspiratory action aspirating septic material into the base of the lung, thereby lessening the danger from pneumonia. In all cases of thoracoplasty it is one of the factors of producing rest or immobility of the chest, as the paralysis of the diaphragm prevents inspiratory movements and also compresses the base of the lung.

Pneumolysis, or apicolysis can frequently be used as an adjunct to thoracoplasty. It is especially useful in compressing a cavity with thick resistant walls. As an independent measure it has a very limited field. It may be used to assist intrapleural thoracoplasty and extrapleural thoracoplasty in obliterating old empyema cavities.

SUMMARY

(1) Patients with pulmonary tuberculosis formerly regarded as lost, can now be saved by surgical collapse of the lung.

(2) Pneumolysis or apicolysis is a supplementary measure to thoracoplasty.

(3) Phrenicotomy alone is of decided benefit: (a) In tuberculosis of the base of

the lung; (b) In the control of the severe pulmonary hemorrhage, where it may be the determining factor; (c) In alleviating the patient's condition in advanced tuberculosis; (d) It may relieve impaired cardiac function.

(4) Phrenicotomy is an adjuvant to thoracoplasty in further promoting rest at the base of the lung and at the completion of artificial pneumothorax.

(5) Paravertebral extrapleural thoracoplasty may be satisfactorily performed under novocaine nerve block.

(6) Surgery of the chest denotes a tremendous advance, and is becoming an important chapter in the progress of the science.

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CAUTERY EXCISION IN CARCINOMA ABOVE THE CLAVICLE

JAMES F. PERCY, M. D.
Los Angeles, California

(Read before the New Mexico Medical Society, Albuquerque, May 11, 1928.)

Cancer above the clavicle is slow to metastasize and is, therefore, peculiarly favorable for surgical attack with the hot knife. Authors vary in their estimate of the tendency of malignancy to spread in this region. Some rate it as high as five per cent. Others (Crile and Blair) as low as one per cent.

Cancer of the lip, mucous membrane of the cheek, tongue, floor of the mouth, tonsils, jaws, larynx, nose, sinuses, ears, antra, glands of the neck, and of the skin, especially of the face, eyelids, and eyes, promises more in the way of beneficial results from cautery surgery than does malignancy in any other region of the body, with the possible exception of carcinoma of the bladder.

I can only hope to make clear in this paper a few of the fundamental factors necessary to give the patient, suffering from cancer above the clavicle, the greatest possible benefit from heat applied grossly or with the cautery knife.

I have now had sufficient experience in the surgery of malignant growths in the various regions of the body to claim that cautery surgery offers more in the way of cure and palliation for the early and late cases than any other known form of treatment. There is no sort of pathology so easy to correct with the heat applications as early malignancies in the areas just mentioned. There are certain imperative preliminaries necessary, however, before this statement can be made good, the chief being that there must not have been any previous attempts at cure by the use of the cold steel knife, radio-active agents or caustic pastes. Secondary attempts in the treatment of cancer with the hot knife, although by no means hopeless, bear an almost geometrical ratio of failure, based always on the number of previous attempts to destroy the growth.

The tragedy of cancer is the neglected case. In the early stages, in any of the regions mentioned, the treatment and cure of these patients by the thorough application of the heat, is so simple and successful as to be almost beyond belief to those not familiar with the heat technic. This applies especially to the early manifestations of cancer of the skin, above the clavicle. These are the types of the disease that are so frequently neglected, not only by the victim of the growth, but by his physician as well. It is an inexplicable fact that here, as elsewhere in the body, the early manifestations of cancer are rarely treated. They are usually permitted to become destructively offensive, not to say loathsome and repulsive, before anything effective is attempted to change the course of this otherwise fatal disease. Whether this seeming unconcern is due to a primary feeling of hopelessness, or, on the other hand, to a fatalistic stoicism on the part of the patient, is difficult to decide. I am quite sure, however, that this ruinous fact is often primarily due to the unfortunate attitude of our profession toward the early treatment of cancer, not only in the past, but even today. We infrequently attempt anything in a radical way in this disease until some of its dreadful, compelling and often appalling terminal expressions occur. Is it any wonder, then, that these patients follow our plan of early neglect until they are literally forced to do something to keep them among their friends? And if they do come, whether early or late, what do they get? The first suggestion is usually an expression of pessimism wreathed in whispers and draped with gloom and hopelessness, often ending with the heartless advice to take morphine and die. We rarely have anything for their salvation except some indifferent and questionable treatment which we suggest and offer to apply in such a way that it carries but little conviction or hope for deliverance from their disease. In order to successfully manage the cancer patient, we must first change our point of view before the public as to our ability to cure at least some of the various manifestations of this Protean disease.

If physicians but knew the value of the

early, thorough, cautery destruction of accessible cancer about the face and neck, not to mention any more, there would be no terminal cases of the disease such as are so commonly seen today.

DIAGNOSIS

Any sore on the skin that persists over one month, regardless of the nature of the local treatment, and especially if it recurs, is almost certain to be due to either syphilis, tuberculosis or cancer. The exceptions to the practical truth of this statement are so few that they can be ignored. But before any of these three scourges become sufficiently developed to attract attention, we often find localized areas of roughness of the skin which have persisted for months, or even years, before they begin to break down. Patients frequently, when they finally speak to their physician about this form of local trouble, say that at first it was merely a pimple or a little collection of "scurf skin." This is their fanciful, but not altogether inaccurate, description of a very significant but too often ignored pathologic process. I know of no treatment that will certainly and permanently destroy this abnormal collection of surface cells except a finished application of the cautery heat, or the less desirable caustic pastes. I see these areas most frequently after they have been made to disappear several times following treatment with sundry pastes, ointments, acids and radio-active agents. The significance of their perennial return after the application of these various irritating, but rarely completely destructive methods, is usually not grasped by the physician or understood by the patient. Any growth that returns after apparent eradication by physical means, is not innocent. The skin of the face in some individuals is especially prone to take on keratotic changes. This is characteristic of those who spend much time in the open, particularly when exposed to the sun and wind, and whose skin is given no special care or protection. If they are no longer young, all of these tendencies toward abnormal variations in the exposed integument are accentuated. When the real meaning and import of the persistent recurring changes in and under the skin are finally recognized, the patient is usually well on the road in the direction of chronic malignancy. This is particularly true if some of the adjacent lymph glands are hard, and enlarged sufficiently to be palpable. If, in addition, they are fixed to the skin or to the underlying structures, the outlook for the patient is serious just in the degree that this fixation characterizes his disease. The fixity and firmness not only determine the prognosis, but also much of the extent and character of the treatment required.

TREATMENT

What I shall say on this part of my subject must necessarily be restricted to a description of the application of the heat technic to a limited number of the possible malignant growths above the clavicle. But the principle of heat penetration by means of the cautery, can be employed wherever it may be found desirable to treat accessible cancer with the hot iron. As a rule, we make the grievous mistake of applying the minimum amount, or degree, of treatment of cancer as our preliminary effort. This rule should be reversed in favor of the maximum attempt as our first endeavor. When this is done, not only medical men and women, but the public also, will soon learn that something can be accomplished, both in the cure and in the amelioration of cancer.

Most of the patients with frightfully destructive lesions about the face, which I am asked to treat, give a history that began a few months previous to their first seeing a physician. In addition to this, when we remember that their disease almost invariably primarily appeared as a small, persistent, superficial, circumscribed accumulation of apparently innocent cells, the tragedy of their mismanagement becomes shockingly evident. I want to repeat here that the maximum treatment of this condition is, by all the rules of correct cancer surgery, the important one. Destroy it early and utterly with the hot iron and it is cured. But if we piddle and temporize by using the cold steel knife, caustics, acids, the various light treatments, radio-active agents as they are usually applied, or other stimulating irritants, although we may temporarily improve its appearance we will rarely cure the disease. Indeed, we are quite certain to take from the tissues their otherwise normal resistance to the development of cancer, and the recurrences that almost inevitably follow are then too often viciously beyond any method of treatment, heat or otherwise.

THE TECHNIC OF HEAT APPLICATIONS

This will depend on whether the lesion to be treated is on, or fixed beneath, the skin. If on the surface, the most satisfactory results will be obtained by the application of a suitably sized cautery tip to the mass, through the **entire** thickness of the skin, until it is melted down and uttterly destroyed. This means that the heat should be applied until the compact circumference which characterizes the morbid growth, is destroyed down to the normally movable structures beneath the tumor and the skin. This method is particularly applicable in the

late cases, where the growth has broken down and become offensive, not only to the patient, but to those about him. As a rule, when the tumor has reached this stage, it is more or less fixed to the surrounding, and especially to the underlying, structures. This melting or destructive process can be done most effectively with my ball-tipped cautery. One of the advantages is that its bulk is sufficient to carry a penetrating degree of heat through the tissues a considerable distance beyond the pathological area. A temperature in the iron that will not carbonize is shown by a dark red color when viewed in a dark room. This degree of temperature should be applied slowly and continuously, until the entire thickness of the involved and surrounding skin and the mass, including the underlying fixed and adjacent structures, are thoroughly infiltrated with a cancer-killing degree of heat.

The remaining method is the total excision of the growth as an ordinary surgical procedure, with the hot knife. In the melting down or in the excision of fixed pathological structures with the cautery, I have formulated the following surgical rule, which works out in practice most effectively. **All tissues normally movable, fixed by the pathology, make normally movable again with the heat.**

If the growth is beneath the skin and not attached to it, the incision should be made so as to form a flap that will permit free exposure of the mass. When this is accomplished, it can be dissected out with the cautery knife, the flap replaced and sutured. It is well, as a rule, to insert a small **unrolled** rubber tissue drain at the most dependent part beneath the flap. If the growth springs from some of the normally protruding parts of the head—ears, eyelids, nose or lips—either primarily or by extension from an adjacent malignant area, it should be boldly melted down, as already directed, or cut away with the hot knife. The skin over the cartilages of the ear, eyelids and nose, always heals kindly, if not previously treated with radium, following either incision or excision with the hot knife, provided certain

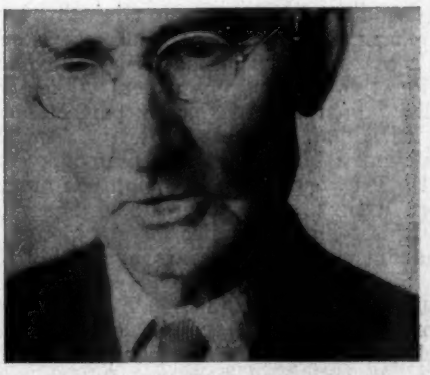

Fig. 1. Central carcinoma of lower lip of two months' duration. The photograph does not show the elevation of the growth nor the degree of infiltration of the skin and mucous membrane.

Fig. 2. Untouched photograph of leather cap following cautery knife excision of lower lip for carcinoma.

Fig. 3. Appearance of lip after the leather cap has been cast off. This usually requires from two to three weeks.

Fig. 4. Appearance of the lower lip three and one-half months after removal of carcinoma with the cautery.

simple rules are obeyed in the after care. The most important of these is that no primary gauze dressings containing emollients, ointments, or antiseptics, especially of the Carrel-Dakin type, be applied to the operated area, and particularly to the edges of the wound, so long as the leather or horny cap,

Fig. 5. Scar of horse-shoe shaped flap made with the cautery knife, one year previously, for exposure of the maxillary antrum. The photograph of the remains of the incision is much more pronounced than when viewed naturally. At the present time, nearly four years following the cautery treatment, the scar is practically invisible to casual inspection. Part of this must be attributed to active massage, which is always an important factor in restoring scar tissue to that which suggests the normal.

formed by the heat, remains in place (Fig. 2). There is no aseptic dressing that we might want to employ, so perfect as this covering substance which is formed by the hot knife as it coagulates its way through the tissues. It is also well to remember that, treated in this way, i. e. not disturbed, this perfectly fitting leather-like covering remains in place until a wall of normal repair cells is formed beneath it. It is then ready to be, and is, cast off. When it is, normal healing of the parts results, even to restoration of the lip to its previous normal appearance, including the vermilion border, and with an amazingly small amount of scar tissue (Figs. 3-4). If this method of protecting the newly forming, or formed, repair cells beneath the cautery-made leather-like cap, is not followed, the tissues will likely become infected and slough, entailing an unnecessary loss of useful tissue, making the final cosmetic result much less complete. This almost perfect result does not follow if the lip carcinoma has previously been "cured" by treatment with radio-active agents.

The unavoidable limitations for a paper will prevent my going into more detail at this time on a subject with so many important subsidiary surgical offshoots. There are, however, two common malignant lesions above the clavicle that every physician sees rather frequently and which are, not uncommonly, badly managed. These are cancer of the lip (Fig. 1) and of the antrum of Highmore (Fig. 5). Cancer of the lip is frequently a viciously destructive process for the individual in whom it develops. On the other hand, malignancy developing in the maxillary antrum is much slower in its evolution and progress and metastasizes, as a rule, very late, if at all. This latter fact, however, is but rarely true of cancer of the lip, so that the statement made above regarding any sore that persists over one month, if on the lip, should excite our suspicions at once as to the possibility of its being either malignant, syphilitic or tubercular.

Right here it is important to stress a very practical fact in my experience. If a patient has a positive Wassermann, do not assume that his lesion is syphilitic alone in origin. This is well illustrated in cancer of the tongue, in which statistics seem to prove that in eighty-five per cent there is a luetic base, but treatment of the lues does not cure the cancer. Ewing, of New York, said a very wise thing in a recent article (1924) to the effect that, if a mass looks like cancer clinically, it is cancer. His idea was that we should not become too much wedded to laboratory methods, and especially the microscope, in the diagnosis of cancer. It was refreshing to have a scientist of the standing of Dr. Ewing emphasize the value and importance of clinical experience in the solution of some of our diagnostic problems.

This is particularly important in the management of a persistent sore on the lip or tongue, combined with a coexistent positive Wassermann. If the lesion clinically looks like cancer, it is almost certain to be cancer. This was especially emphasized while I was writing this part of my paper. A splendid looking, apparently physically perfect specimen of a man presented a letter from his physician asking that I treat his sore mouth. The condition began eighteen months before with a small ulcer under the right tip of his tongue. He also gave a history of a chancre twenty-five years ago. This further disclosed that when he consulted his physician one year and a half ago, he was at once put upon a course of salvarsan, which was followed by the continued use of potassium iodid and mercury. But the sore was not improved at any time by the treatment. It continued to grow until, when I saw him, the anterior one-third of the floor

of his mouth was absolutely fixed by cancer. To the tip of the examining finger it felt as if it were cemented in. There was also a deep craterous ulcer, about two centimeters across, under his tongue; the glands on both sides of the neck were greatly enlarged, especially the right submaxillary; and there was pain in his left ear. He could no longer sleep comfortably because of this pain. Pain always stirs the patient and finally the physician and the surgeons also. But what of the medical man who continued to treat this patient for syphilis in the face of the fact that the disease continued to grow in the tissues in the floor of the mouth, the tongue and on both sides of the neck, in spite of treatment for eighteen months? To treat these patients with intravenous arsenical preparations alone, especially if combined with mercury and iodids, may withdraw from them all hope of a subsequent favorable outcome from surgical treatment for the amelioration or cure of their cancerous lesion. In all of my experience I have never seen one of these cases clear under antisyphilitic treatment, but many times I have witnessed the increased growth and progress of the disorder, often to a deplorable extent. So, I repeat, if the mass looks like cancer, it is cancer, even though the laboratory and the clinicians may incline to the view that the trouble is entirely syphilitic. If they insist that it is only this, all I can urge in the interest of the patient, is to try and limit the experiments with drug treatment to the shortest possible time. When this is over, if the patient is still operable, then the indications are always and most imperatively for the excision of the growing mass with the cautery knife. It is true that frequently after ablation where there has been a positive Wassermann, the ultimate healing may be more perfect if the patient is given, subsequent to his operation, tonic doses of mercury and iodid of potassium. But to give these actively and alone and for a long time, is but to invite ultimate disaster to the neglected patient from the progress of the malignant process in his mouth.

The nearer to the median line of the tongue or lip the lesion is situated, the more danger of bilateral involvement of the glands beneath the mandible and in those of the neck. This brings up the never failing surgical question of the wisdom of cleaning out the gland-bearing fascia in both of these regions. I shall dismiss this question here by the simple statement that I believe it to be a most unfortunate breach of good surgical judgment not to remove these glands primarily, with ligation of both external carotid arteries, in practically every instance where it can be done. The patient is never safe from a recurrence in the neck following the development of cancer in the tissues higher up in the head.

The most effective removal of cancer of the lip can be made one of the simplest of surgical procedures. The proper elimination of the glands of the neck, unfortunately, is not in this same class. Their destruction not only requires hospital care but it is a major surgical procedure, by any method. Any part of the lip (Figs. 1-2-3-4) however, can be removed in one's office without any anesthetic, either local or general, with practically no pain, immediate or remote, to the patient. This statement also implies the entire absence of the use of morphine or hyoscine. The hot knife effectively kills nerve conduction, practically instantly. All that is required is that the patient lie down on the examining table. His eyes should be covered with a rather thick layer of moist cotton, and mildly acting compressing forceps are applied to each side of the lower lip at the angle of the mouth—usually old sponge-holding forceps that have lost much of their compressing power, serve best. They not only shut off the inferior coronary branches of the facial arteries to the lip, but are also utilized to turn it outward away from the teeth. At the same time the mass to be removed can be held steady with good tissue forceps while the cautery is made to encircle it. The most desirable type of cautery knife is one that is thick enough to carry a steady and sufficient degree of heat through the tissues, regardless of how wet they may be. Such a knife will not cool rapidly and carries a reserve of heat that permits of its dissemination far beyond the area of its immediate contact with the malignant structures. The short thin-bladed platinum knives usually found in the instrument shops are practically useless for anything but the lightest of cautery requirements. My big copper knife is almost ideal for all types of cautery service. I use it about the eye and in amputations of the thigh, with equal facility. It usually should carry a temperature that will cause the heater at the base of the knife blade to show a dark cherry red. This temperature transmitted to the knife will cause its tip, when dipped in liquid soap, not to hiss, and no soap in the form of bubbles will adhere to it when taken out of the soap solution. A temperature of this degree will cause but a slight momentary sensation of discomfort when it touches the mucous membrane. It is important, when applying the heated knife to the

lip, to keep it there without removal until the entire pathological area has been excised. The heat in the knife blade should be sufficient to permit it to slowly coagulate or melt its way through the tissues. If there is any bleeding while severing the tissues, the instrument is too hot and the electric current should be turned down sufficiently to prevent this. The horse-shoe shaped wound that is left should have a smooth, brown, leathery-like surface (Fig. 2). This, as has already been stated, should be let alone, i. e., without applications or treatment of any kind. If the teeth are absent, the saliva will escape from the mouth and soften and infect the cauterized edge of the wound. In that event some mild antiseptic ointment, preferably with a lanolin base, or solution, should be applied to keep it clean. One of my patients whose teeth were present but not quite in apposition, adopted the very satisfactory expedient of moulding chewing gum behind them. In this way he retained the saliva and protected his lip wound.

In closing, I want to mention briefly the operation, referred to above, for the destruction of carcinoma in the maxillary antrum, which is not only simple to do, but most effective in its final good result. All of the operations that I have so far found described, attempt to approach the antrum through the nose or from beneath the soft structures at the upper and posterior margin of the lip at its attachment to the superior maxillary bone. Cancer of the antrum cannot be most effectively destroyed when the field is more or less obscured, as it is by these methods of approach. In addition, this much better operation avoids the dangerous and, as well, the deforming, results incident to the removal of the superior maxillary bone. The latter operation is a formidable one and should not be considered lightly. My technic avoids the complete destruction of the lateral half of the upper jaw, except in so far as small parts of the bone may be devitalized and later are exfoliated. The method consists in making an external horseshoe-shaped incision through the skin and soft tissues of the face with the cautery knife (Fig. 5). The base of the incision is just beneath the orbital cavity, and the apex at the attachment of the upper lip to the superior maxillary bone. This latter part of the incision avoids severing the obicularis oris muscle from its attachment to the upper border of the alveolar process. The skin and underlying soft parts are reflected from the bony structures beneath, upward, and are protected from destructive contact with the irradiated heat from the cautery. The cautery knife should then be discarded for one that carries a ball-shaped tip. The anterior wall of the antrum, if not already opened by the disease, should be broken through either with my heavy cautery knife or a bone chisel, exposing the malignant mass. When this is accomplished, the blunt end of the ball-tipped heater is pushed into the diseased cavity and maintained there until all of the abnormal tissues are thoroughly cooked. When this is done, the hot iron is withdrawn and the horseshoe-shaped flap is permitted to drop back into place, and the lateral walls are fastened with Paegenstecker linen sutures. The lower end of the flap remains unsutured in order to permit the introduction of a small unrolled tissue drain which is passed rather freely into the open antrum. This is retained in place for two or more weeks, or until the drainage lessens and becomes serous in character. There is no danger to the eye from the application of the heat in the manner described and the resulting deformity of the soft parts is often surprisingly slight (Fig. 5). The cooked bones should not be touched, either with a bone curette or applications of zinc chloride, with the idea of hastening their removal. If let alone, they will slough out through the beneficent repair powers of the adjacent healthy bony and soft tissues, and leave a normally healing area. In the average case it is not necessary to tie the external carotid arteries. The ultimate results from this technic in this region as to the cure of the malignancy and from the cosmetic viewpoint, are almost perfect.

THE SIGNIFICANCE OF CERTAIN ERUPTIVE DISORDERS OF THE SKIN, WITH SPECIAL REFERENCE TO THE TOXIC ERYTHEMAS, PURPURA, URTICARIA, ECZEMA AND PSORIASIS.

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A very considerable number of the eruptive phenomena which appear upon the skin are routinely recognized and designated as "symptomatic eruptions," that is, cutaneous manifestations of disorders affecting primarily, or principally, tissues or organs other than, or in addition to, the skin itself.

Familiar examples of such eruptions are measles, small-pox, scarlet fever, rose spots, macular syphilide, etc.—evidences of systemic infections; jaundice and herpes zoster—evidences of local disturbance in the biliary tract and a posterior nerve root; drug rashes—evidences of systemic intoxi-

cation from absorption of drugs, particularly the iodides, bromides, balsams, etcetera. In each of these examples, the skin reaction is characteristic, referable to, and due to a definite specific cause and is never excited by any other cause.

Such treatment as may be directed toward any of these eruptions is merely palliative in the expectation and knowledge that they will disappear with the cessation of activity of the exciting cause.

The equally definite and important symptomatic character of many other eruptive dermatoses is, however, often unrecognized or overlooked; eruptions that are frankly cutaneous expressions of internal disorders of widely varying character and often of very obscure origin, infective, functional, malignant, metabolic, at times evanescent or recurring, but often persistent, progressive and serious: of such internal or systemic disorders a skin eruption is not infrequently the earliest tangible evidence. While it is true that this relation of cause and effect is not uniformly specific, a single disorder giving rise to various eruptions, and, on the other hand, the same form of eruption resulting from a variety of disorders, yet the general rule that eruptions of certain character are due to some internal disorder is of definite value to the conscientious clinician. Ordinarily these eruptions are regarded, and dealt with, as primary disorders of the skin, and it is largely because of the unsatisfactory results of such management that skin diseases in general have acquired a sinister reputation for obscurity of origin and resistance to therapy.

To a small group of such eruptions and their clinical significance, attention is here directed in the hope that some one may avoid some of the difficulties that beset my own early experiences with them.

THE TOXIC ERYTHEMAS

Under this heading is brought together a group of disorders of which the dominant, and often the sole, clinical feature is an erythematous eruption, varying in extent from localized, regional or patchy, to generalized macular or complete erythrodermia and in intensity from pale pink to dusky red. All of the acute exanthemata and other rashes appearing in systemic infections and toxemias, particularly alimentary toxemias, belong in this category and are generally familiar. Certain others, however, have a significance that often escapes recognition because of the lack of apparent relation between the eruption and other known disorders.

Rosacea, a congestive erythema of the face and nose, is usually regarded lightly except for the disfigurement, yet it has its origin chiefly in conditions remote from the face itself: most commonly alimentary toxemia from a disordered digestion, gastro-intestinal fermentation, hepatic dysfunction, constipation, achlorhydria, et cetera. Pelvic disorders of all kinds, in women, predispose to localization of rosacea on the chin, and any chronic infection may be responsible for the persistence of this condition.

Erythema Multiforme, as the name indicates, occurs in a variety of clinical forms, the most common being papulo-erythematous, bullous and nodular, which rarely are seen in combination.

The papulo-erythematous type, the most common, appears particularly about the dorsal surfaces of the hands, wrists and forearms, at times on the fingers, the elbows, the nape of the neck, the forehead, the knees, and rarely the feet. The lesions are lenticular congestive spots which spread, become elevated, with depressed cyanotic or even hemorrhagic centres. Tension, burning and itching, with rheumatoid sensations, are common, but severe general symptoms are rare. The eruption extends by successive outbreaks and its duration is from two to five weeks.

The bullous type differs in intensity of the process, the localization being the same except that the mucous membranes may be involved, even the intestinal mucosae, giving rise to severe visceral symptoms simulating surgical conditions. The lesions, instead of remaining flat or papular, become bullous either in their centres or about their borders, forming rimed bullae, often concentric, which, with their cyanotic centres and varying shades of red at their peripheries, form a striking picture called herpes iris.

Erythema nodosum, or the nodular type, appears chiefly over the anterior aspects of the legs, also over the feet and, at times, the forearms and buttocks. The lesions are dermo-hypodermic nodules, varying in size from a bean to a walnut, pinkish to purple in color and painful to touch. They vary in number from two or three to thirty or more. Their soft fluctuating feel suggests a purulent content but they never suppurate and should never be incised. There is often a general disturbance with malaise, fever and rheumatoid pains.

The cause of erythema multiforme is not definite: alimentary and other forms of toxemia are at times responsible, but the most frequent cause is a bacterio-toxic absorption and, in erythema nodosum, definite bacterial emboli derived from localized low-grade infections. Such attacks recur at intervals for years until infected teeth, ton-

sils, sinuses, gall-bladders, appendices, etc., are sought out and properly dealt with. The eruption itself is insignificant but the possibility of serious extension of the original focus of infection is not to be lightly regarded.

URTICARIA

Notwithstanding its striking and uniformly constant clinical features, urticaria is not a true disease entity, but a form of cutaneous reaction to a wide variety of causes and, as such, is the most definitely and characteristically symptomatic of all eruptive phenomena.

As a local reaction to certain violent irritants, such as plants, stings and bites of insects, and extreme variations of temperature; or, in its acute generalized form, as a symptom of alimentary toxemia or of individual susceptibility to particular foods or other substances ingested or injected beneath the skin, urticaria is generally familiar and readily understood; but in its chronic form it becomes one of the most abstruse and complex of present day medical problems, a cutaneous symptom of internal disturbance that will often elude the most expert, persistent and exhaustive search.

The cause of urticaria is composed of two factors, a predisposing vaso-motor instability, and an active precipitating irritation of the cutaneous blood vessels. The vaso-motor instability may be part of an individual constitutional nervous deficiency, or it may be acquired as a result of nervous overstress, exhaustion, shock, et cetera, or the effects of systemic intoxications, alimentary, infectious, glandular deficiencies, et cetera. The precipitating irritations may be either external or internal and are practically endless in number and variety. It is this factor that makes the problem of chronic urticaria so complex and requires investigation of every phase of a patient's life and habits for its solution—his diet, medication, elimination, organic and glandular functions, clothing, occupation and other activities that might furnish a clue to the origin of irritation in each particular case. Even then one may fail, but it is only along this line that any hope or chance for success lies. But chronic urticaria is no minor affair and its victims are made miserable and, not infrequently, their health is seriously affected by the constant annoyance, lack of sleep, and the apprehension of recurring attacks.

PURPURA

Purpura is definitely a symptomatic eruption, since it never has its origin in a purely local disease of the skin; this feature of the disorder is generally recognized in its more severe forms and when the condition to which it is secondary is evident.

The symptomatic character of the milder forms of purpura simplex, however, is often overlooked, since the eruption may form the whole of the clinical picture. This may consist of few or many disseminated purpuric spots, particularly over the legs and thighs, but at times more generally distributed. Other symptoms are mild or wholly absent, yet this erupution definitely indicates the presence in the blood stream of bacterial toxins, or, more probably, living bacteria derived from an infective process somewhere within the body. Such infections may, of course, be relatively harmless, but the risk of neglecting them justifies a careful search and their thorough eradication if discovered.

ECZEMA

Eczema is a polymorphous inflammatory process affecting the skin, due to a wide variety of external and internal causes. It is probable that it never results from either external or internal causes alone, but that internal causes so alter the resistance of the skin that it reacts in this manner to forms of external irritation that would be without effect upon the normal skin. Conceived of in this way, eczema becomes a symptom of internal disorder, and success in dealing with it is exactly measured by success in discovering and correcting the internal disorder upon which it is dependent.

Local palliative treatment is, of course, required, and no patient with eczema would be satisfied without measures to relieve the distressing symptoms and discomfort that always attend it; but local means alone will rarely, if ever, bring permanent relief.

First among the internal disorders that underlie eczema are those of the gastro-intestinal tract; dietary faults both as to quality and quantity of food, abuse of alcohol, tea, coffee, et cetera, dyspepsia due to functional disturbance, particularly an excess or decrease in the normal amount of hydrochloric acid, constipation, intestinal stasis, et cetera.

Chronic infections of all kinds may be the sources of toxemias which express themselves as eczema. Organic disease of the kidneys, liver or vascular system, also latent visceral cancer, are frequently preceded in their active manifestations by severe and intractable eczematous outbreaks.

As part of that constitutional deficiency known as vagotony, eczema appears in alternation, or even in combination, with asthma, hay fever and migraine—a condition which must ordinarily be accepted as incurable, and, in its worst forms, a most formidable affliction.

Nervous disturbances play an important part in the cause of certain forms of eczema; neurasthenia, overstrain, worry shock, inducing a vaso-motor instability in the skin which renders it highly susceptible to external irritation. This nervous influence is probably not direct, but acts by inducing functional, and thus metabolic, disturbances of many kinds which secondarily affect the skin.

As in erythema multiforme and urticaria, allergy plays an important part in the production of eczema. Allergy is now regarded as a congenital or acquired property of specific reaction against definite, widely varying substances, not only proteins, which are wholly, or, at least, in the same quantities, without effect upon the normal organism. Many substances which, alone, are not antigens can acquire antigenic properties by the assistance of certain substances which the organism supplies. Here one's resources and ingenuity will be taxed to the limit to discover the sensitizing agent or agents, since multiple sensitization is very common.

Eczema man constitute a real infirmity, preventing employment in certain occupations. The pruritus and desperation caused by it have led to cachexia or even suicide. Fatal cases for which eczema has been held responsible are probably referable to visceral diseases of which the eruption was merely one symptom.

PSORIASIS

Psoriasis is a congenital abnormal state of the skin manifested by a characteristic eruption under the influence of a variety of precipitating causes, chiefly of internal origin. Many psoriatics pass the greater part of their lives without any eruptive evidence of their condition, but any severe systemic disturbance, a shock, an acute infection, an operation, a profound metabolic upset, will provoke an acute wide-spread outbreak. The eruption itself may then be said to be symptomatic and its treatment along rational lines requires search for the systemic exciting cause.

In this view of its genesis. psorasis is seen to be an incurable affection, but even in those cases in which the eruption is constantly or persistently present, we should not abandon the search for the precipitating cause, since it may be an incipient disorder, neglect of which may lead to serious consequences for the patient.

This by no means completes the list of eruptive disorders that may be regarded as more or less definitely symptomatic. Many of them are frankly pathognomonic: others simply indicate the coexistence of disorders other than those of the skin. They are highly valuable clinical signs, and their acceptance as such will frequently lead to the discovery of other conditions much more important, which might otherwise have escaped notice.

The problem for solution when confronted by any eruptive dermatosis is simply this: Is this a primary disease of the skin which can be dealt with by local measures, or is it merely a symptom? and if so, of what? The successful solution of that problem will mean the comfort, the peace of mind, and often the well-being of many patients.

SUPERIOR MESENTERIC THROMBOSIS

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Superior mesenteric thrombosis was practically unknown until that brilliant German pathologist described a case from the postmortem room. Virchow, due to his thoroughness. discovered a superior mesenteric artery enlarged and completely closed with a thrombus, so that it appeared as a fibrous cord. The patient, a woman, had succumbed to some other disease and he wrote in detail of the case in 1847. In this case the clinical side does not appear, for the condition had existed for some time, and Nature had come to the rescue and established a collateral circulation. This type of case usually passes unrecognized and is often entirely overlooked, being diagnosed as one of colic, or some partial intestinal obstruction. and after recovery the patient may pass along and succumb to some other disease. A postmortem may never be made. and should there be. the examiner may not be thorough enough to examine all the tissues, as did the brilliant Virchow, and so the condition may never be discovered.

This condition is not common. for, since the first careful description in 1847. about five hundred cases have been described, with only thirty-five of these surviving the attack, whether operated or not. This gives the appalling mortality of ninety-three per cent. The artery is involved about five times as often as the vein, and the superior mesenteric is involved about forty times as frequently as the inferior. It is true. the amount of intestine supplied by the superior is much greater, as it extends from the duodenum to the anastomosis with the inferior at the middle colic. Also Litten maintains that the superior is a type of end artery and has more of a tendency to infarct, while the inferior tends to establish a collateral circulation. One would suppose,

in an artery which forms arcades, that collateral circulation would easily and most frequently obtain. Even though Virchow, Karcher, Chiene and others have had cases discovered in the postmortem room, having died of other more marked pathology, yet collateral formation is the exception in this artery. Karcher's case was a female, forty-one years of age, who had cardiac decompensation symptoms with abdominal pain. She developed femoral thrombosis and in six weeks was operated for gangrene of the leg. She died a week later and on postmortem showed, in addition to disease of the mitral, tricuspid and aortic valves, lateral thrombi in both auricles, infarcts in lungs, spleen and kidney, an obliterating thrombus in the profunda femoris, and, what is more interesting, a thrombus obliterating completely the superior mesenteric artery for a distance of thirty-seven millimeters. This thrombus was firmly adherent to the walls of the artery, but, in spite of that, there was only slight reddening of the mucous membrane of the ileum. Chiene's case showed an aneurysm in a female sixty-five years of age with the coeliac axis, superior and inferior involved and the latter vessels were completely obliterated, forming fibrous cords.

The causes of this rather rare condition may be better studied if we separate the pathology of the artery from that of the vein. Under the artery we think first of embolus, which is often followed by thrombus, or of thrombus alone. The embolus comes from heart valves and vegetations, atheromatous plaques, and thrombus in the auricles or ventricles breaking up; the thrombus, from diseased arteries, aneurysm with extension of the clot and pressure on the artery from aneurysm or tumor. In venous involvement, various causes which may injure the veins, or infect them, or a combination of the two, are the factors. The more frequent causes are crushing and ligating the appendicular veins, pelvic surgery where adhesions are present, splenectomy, volvulus, intussusception, strangulated hernia, or extension from the splenic or portal veins. Clinically they differ in that the arterial disposes to be sudden in onset while the venous tends to be gradual.

Much experimental work has been done to try to ascertain the exact pathology and account for the variety of clinical symptoms manifest in these cases. Sprengel's theory, that obliteration of an artery gave an anemic infarct, while the same in a vein gave an hemorrhagic one, does not here obtain, for, regardless of the cause, the infarct disposes to be hemorrhagic. This hemorrhagic infarct is usually followed by peritonitis, the mucous membrane ulcerates and breaks down with hemorrhage into the canal. The mesentery becomes edematous and the intestine may perforate and cause the peritonitis from macroscopic lesions. Extensive gangrene may develop in forty-eight hours and there may or may not be a distinct line of demarcation.

Following the suggestion that the arteries are terminal, as advocated by Litten, various experiments have been done upon the lower animals, but whether the conclusions are safe to accept for the human is a question. These experiments include: (1) ligation of the artery or vein; (2) artificial emboli (oil) which are not typical, so not parallel; (3) cutting portions of the mesentery along the intestinal attachment to study the effect on the mucous membrane.

The result of the experiments in ligating the artery was anemia followed by violent tetanic contractions of the small intestine, followed in two or three hours by relaxation and congestion, to terminate in an hemorrhagic infarct. Beckman and Ravenna showed, in operations on rabbits, dogs, and cats, that no effects were produced and that collateral circulation was established. Injection of paraffin if a large infarct is produced, the center tends to be anemic and the periphery hemorrhagic.

Tying the mesentery along the border of the intestine in three centimeter lengths produces first the change in the mucous membrane by areas of necrosis, while greater lengths, as five centimeters, produce necrosis of the mucous membrane and the wall, but first in the mucous membrane and to a greater extent.

The deductions from the various experiments are as follows:

1. Lodgment of embolus may not produce infarct, but a collateral circulation may be established.
2. Slow closure by a thrombus may stimulate collateral circulation.
3. Many cases of closure of the artery may be overlooked, due to the collateral anastomosis, and the terminal event be foreign to this pathology, so escape detection at autopsy.
4. Cases of aneurysmal pressure with thrombosis and no infarct.

Welch and Mall ligated the collateral circulation of the small intestine at the pancreatico duodenal and at the middle colic, and nothing happened, as the superior mesenteric was still intact. They then compressed this artery and, when it reached one-fifth of normal, they began to get infarction. This led them to believe it was a matter of

pressure in the artery, whether due to pressure constricting the vessel or cardiac; namely, vis a fronte.

Karcher's case seems to corroborate the latter. A female, forty-one years of age, with cardiac failure and collapse, was brought into the hospital. There was violent abdominal pain and frequent bloody stools, with distension of the abdomen and tenderness. The left leg was very painful along the femoral and later this had to be amputated, due to gangrene. Heart decompensation continued and death followed a week after the amputation. The autopsy showed multiple lesions in the heart, as described above in this article, with infarcts in lungs, spleen and kidneys, and thrombosis of the femoral vein with obliteration of the superior mesenteric.

Conclusions: Pain due to lodgment of the empolus, with injury to the intestinal mucosa, as evidenced by the bloody stools, but collateral circulation was fairly established. Many cases have cardiac lesions so lessened vis a fronte and a decreased circulation, so, venous stasis with less blood passing through the part, and so, less ability to form collateral channels.

Councilman's case was incomplete obliteration, with fecal vomiting and obstipation and death from intestinal obstruction. Here the pathologist reported atheroma blocking incompletely the superior mesenteric artery, with no changes in the intestines. So the circulation may be partially disarranged with intestinal obstruction and the intestine remain intact. Thus it requires more blood to keep the peristaltic function intact than it does to keep the life of the tissues. This conclusion is shown in intermittent claudication, where the function is disturbed before the life of the tissues.

Reich's case gave all the symptoms of intestinal obstruction, and was operated for the same, and after careful exploration nothing was found. The symptoms persisted and a colostomy and ileostomy was later done, but the patient died.

Autopsy findings: Arteriosclerosis of the aorta, partial thrombosis of the superior mesenteric and an infarct involving the jejunum to the extent of eighty centimeters, thus manifesting after the operation, though no doubt the thrombus existed and produced the ileus of this loop, with the clinical symptoms.

In summing up the above cases we would see three very distinct classes:

1. Like Karcher's, with other pathology overshadowing the thrombus and collateral circulation becoming established.

2. Reich's case being to the opposite extreme, with marked infarction and destruction of the mucosa.

3. Councilman's, intermediate, with intestinal obstruction being the overshadowing symptom and no marked pathology in tissues.

The amount of pathology will depend on the cardiac compensation and the vis-a-fronte.

A careful history is of value in about two-thirds of the cases, and will show some suggestion of an etiology; namely, valvular disease, arteriosclerosis or aneurysm, with exciting causes of abdominal surgery on stomach, appendix or hernia. There may be exertion, but pregnancy is also a factor. In the balance of the cases, the history has no bearing. Men are more frequent than women, as two to one, and between twenty to sixty years of age.

Pain is constant in type and paroxysmal, wave-like, merging into the continuous pain of peritonitis. The intermittent type of pain may be ascribed to the anemia which, for the first few hours, is tetanic in type, As it becomes intermittent, it simulates the pain of intermittent claudication. There may be some association with peristalsis disturbed by the obstruction.

Vomiting is frequently present, at first reflex, then obstructive, and later due to the ileus of peritonitis. This is of the stomach contents and, in the severe pathology, that of the intestinal contents, which will eventually be bloody.

Constipation or obstipation is present in the two types of cases; namely, those with the severe destruction of the mucosa and those where peristalsis is paralyzed and no destruction of mucosa. There may be slight amount of flatus with enema but if the involvement is marked, none will pass. Blood is present in the more severe form and will be present in about forty-one per cent. Early diarrhea may precede the constipation. The constipation may at first be due to the paresis, or, in turn, to the gangrene, and later followed by that due to the peritonitis.

The temperature may at first be subnormal but rise later, due to the peritonitis. The abdomen is tender throughout but may be accentuated in a certain area. Gradual distension appears, which, is usually tympanitic, but may be flat in the sides, later, due to fluid.

Palpation may reveal a local mass, due to the edema, in the mesentery and if palpated, with the other symptoms and findings, helps one to make a diagnosis. On auscultation one finds a gradually decreas-

ing amount due to the paresis, and the onset of the peritonitis.

A leucocytosis is usually present, approximately 20,000, with a differential above eighty-five per cent.

One may classify the symptoms again after the pathology:

1. Very severe destruction; the main symptoms of which are diarrhea with bloody stools and hematemesis, associated with collapse.

2. Less severe, with all the symptoms and landmarks of obstruction.

3. Combinations of the above; namely, bloody stools and hematemesis with obstruction symptoms.

4. Meagre pathology with symptoms overshadowed by greater pathology, and the patient may form collateral circulation.

5. In this group we have very mild pathology but the symptoms are akin to ulcer; namely, pain following eating, which is relieved by vomiting. The pain is explained by the food stimulating peristalsis and this is like the intermittent claudication due to the anemia, and a partial ileus exists. This is followed by vomiting and relief. There may be associated cardiac disease and, so, low pressure in the superior sclerosis where there is a decrease in the blood supply.

Gerhardt says a typical case should present the following: A definite cause for an embolus, intestinal hemorrhage, paroxysmal pains, ileus, fluid in the abdomen, subnormal temperature, with a palpable abdominal mass. If there is no vomiting of blood nor diarrhea with bloody stools, then it will resemble Councilman's case and be diagnosed intestinal obstruction.

The differential diagnosis of the following are to be thought of: Acute perforative appendicitis, volvulus, intussusception, and intestinal obstruction. The more severe cases of thrombosis with the manifestation of bloody stools and vomiting are not confused with the appendix. In the latter, there is pain about the umbilicus, with initial vomiting and then temperature. The pain passing to the right iliac fossa, no obstipation and a return of the vomiting much later, help to place the diagnosis.

Volvulus occurs more in older people, with no specific etiology of thrombus, no bloody stools; but obstipation and distension and vomiting tend to place it as an intestinal obstruction. This, in turn, may be the point in the middle class of the thrombus where all symptoms, as in Councilman's, are obstruction.

Intussusception is more nearly like the severe type of thrombus. Here we have a child, more often, with sudden attack of obstruction with vomiting (not bloody), with bloody stools and often the sausage-shaped tumor palpable per abdomen or the head per rectum. If there be no diarrhea of blood, and hematemesis, the cases are diagnosed as intestinal obstruction.

The prognosis depends on the extent of the thrombosis and the early recognition and treatment. The progress is rapidly downward, with rising temperature, collapse and peritonitis. Sixty per cent die in the first week and the mortality approximates ninety-five per cent. Five hundred cases are reported in the literature and only thirty-five survived.

Treatment may be classified into the degrees of the pathology:

1. Very mild, with the symptoms of ulcer.

2. More severe, with abdominal findings but where the pathology elsewhere overshadows.

3. Most severe cases, where infarct forms.

In number one, the symptoms are ulcer with the pains as recited above, which are due to the peristalsis being excited by the food intake; and, due to the anemia of the part, there is spasm. Here diets easily digested, with medication to assist digestion. The pathology is a partial closure or a very decreased blood supply due to splanchnic sclerosis.

In the more severe, with overwhelming other pathology, the abdominal symptoms are not of sufficient severity to warrant a laparotomy with the other cardiac, or cardiovascular symptoms, and here eventually, under symptomatic treatment, the collateral circulation is reestablished.

In the very severe types operation is the only method of choice.

CASES

At this point I wish briefly to describe two cases. The first was during my interne days and was so unique that it was not easy to forget. A woman approximately twenty-eight years of age, came into the hospital with only the symptoms of a chronic appendix. She was of the upper strata of society so could have everything she desired. My chief, one of the best surgeons whom I have ever known, operated and removed a small chronic appendix and there was no other pathology. The following days were tragic. The relatives were there and consultations were frequent. The patient began to vomit slightly, the abdomen began to distend and the bowels became more constipated. The temperature rose gradually and the abdomen became more silent until all the symptoms were of a peritonitis. All means to quiet the vomiting were exhausted. Consultants had some suggestions but of no avail, and the eventual came. The postmortem revealed

a thrombus in the ileocolic vein and a portion of the ileum was gangrenous, with a diffuse peritonitis. I can see the patient, a reasonably healthy young woman, restless, vomiting, distended abdomen, nothing relieving the same, and the anxiety of the relatives. It certainly impressed me that a chronic appendix is not to be despised nor a suppurating appendix to be despaired.

The next case, a nurse thirty-two years of age, single, was admitted to the hospital complaining of pain in the right side. She had a negative urine, blood and Wassermann. At this time, September 21, 1927, I removed her appendix and did a subtotal hysterectomy for a multinodular fibroid uterus. She was brought into the hospital almost four months later with a very acute abdomen, which had its onset about fifteen minutes after she had eaten a ham and lettuce sandwich. Her temperature was 97 degrees upon admittance, pulse of 64, and respiration of 20. On the 19th of January, the day following the admission, I saw her for the first time. She was now transferred to the Surgical Service. She gave a history of nausea and vomiting, severe paroxysmal attacks of pain, though it was more or less continuous.

The pains on admission were much more severe and the patient rolled in agony at the time. The admitting physician could not account for the severity of the pain, and, being in a woman, he feared it might be exaggerated. As I had operated her only four months prior, and had removed the uterus and appendix, and there was no history of ulcer, I was firmly of the impression there was a relation to the food, even though some friends had partaken of the same kind of sandwich at the same time. Enemas were followed by a great discharge of blood, and the results of the enemas were not satisfactory as to flatus and feces. The tenesmus and also the vomiting continued. The patient assumed a dorsal or lateral position, with knees flexed, and the hands on the abdomen, in great pain. She had received an opiate under the medical care, so was not in the severe pain of the day previous. Her face was anxious and she looked haggard and tired. The heart was negative for valvular; blood pressure of 138-70. The abdomen was distended and tympanitic, with a suggestion of flatness in each flank. Definite rigidity existed and was of the lower abdomen, with possibly more on the left rectus. My impression was a gastro-enteritis from the sandwich. A urine and blood examination was suggested and this was later phoned to me as follows: 20,400 leucocytes with eighty-five per cent polys. Urine 1.026 with one per cent indican. The urine showed the dehydration with a suggestion in the indican of small intestine trouble. The temperature was 99.2, pulse 76, respiration 20, in the morning, but in the evening they were 99.6, 84 and 22.

January 20th the abdomen showed more tympany, with less peristalsis, and only in the upper abdomen was there audible peristalsis. The lower abdomen was more tender and more rigid. A pelvic examination showed the cervix mobile and no evident tenderness in the cul-de-sac or the adnexal regions. The evidence was not conclusive as the abdomen was too tender and rigid to allow abdominal palpation. A repetition of the enema gave blood and practically no flatus. A repetition of the blood count gave 20,450 with eighty-six per cent polys. A special uring was examined for indican and showed 1.030 sp.gr. with a three plus indican. Temperature, pulse and respiration in the morning were 99, 100, and 16, and later in the day they were 99.6, 100, and 18.

In view of the severe pain followed by vomiting, which was marked at first but less the second day, continuing with nausea, together with unsatisfactory results with enemas, and the presence of blood, and the blood count persisting with a little increase, together with the marked increase in the indican, I made a tentative diagnosis of incomplete obstruction of the small intestine, probably associated with the appendix operation. My reasons for the diagnosis were that appendicitis, salpingitis and ectopic were eliminated by the first operation. The paroxysmal severe pain associated with peristalsis, apparently, and the presence of indican in excess, suggested small intestinal obstruction, and the blood and slight flatus made me modify to incomplete obstruction.

Upon the above diagnosis I made a right rectus incision, removing the old scar, and believed the trouble would be due to adhesions from the previous operation. On reaching the peritoneum it was dark, as seen in a recent ectopic rupture, and on entering the abdomen, free blood was present. It could not be ectopic and I had never seen an ulcer give free blood, and there were no food particles. I made a culture of the blood, which had a slight odor. On examining into the left pelvis I found a few recent adhesions trying to wall off a loop of ileum about fifteen inches long, absolutely black, and the endothelium losing its sheen and gloss. There was no evidence of bands nor volvulus, but the mesentery was thick and edematous, and this blackness faded into the edema of the normal intestine. The vessels were thrombosed and it was speculative as to the extent of the pathology. The loop was withdrawn and excised and the ends of the ileum sutured into the lower angle of the wound. Plenty of drainage was inserted and a wide sheet of rubber tissue placed to wall off the upper from the lower abdomen, and the wound closed. A tube was inserted into the proximal and the distal loops of the bowel..

The patient went along and made an uneventful recovery, with an ileostomy wound. We used the distal end to give Murphy drip and thus save the patient from nausea incident to the need for excess fluids. In about four weeks I again operated and did an end to end anastomosis and the patient had a good recovery and left the hospital March 14, with only slight soiling of the dressings due to a very small fistula, which later healed.

As to the surgical treatment of the condition. One can never estimate the extent of the damage. It may have reached its limit or it may extend farther after the operation. There are two methods of handling the case. Moynihan suggests the excision as I did in this case, and making the enterostomy openings and using them for fluids and food, etcetera. Others, if possible, treat the loop as in a Mikulicz operation, and later excise the loop and have the gun-barrel effect, and then anastomose. It is usually inadvisable to anastomose at the time because the patient is in great shock and the added time is an item. Also the edema of the apparently normal bowel is great and makes the operation difficult.

CONCLUSIONS

Occlusion of the mesenteric artery is usually from an embolus followed by thrombosis. In the mesenteric vein it is thrombosis from the start.

The lesions produced are variable from slight congestion to marked ulceration and extensive gangrene:

1. The occlusion may be followed by collateral circulation either of a temporary or permanent nature.

2. The occlusion may be followed by cessation of function, yet the life of the intestine be intact.

3. It may be an infarct with death of a variable amount of the small intestine.

If we have occlusion of a branch and get collateral circulation, we may have slight abdominal pain and distension and these be overshadowed with a greater pathology and the patient survive.

In number two, where the occlusion is in part only, and the function is disturbed, without the life of the tissues, the symptoms may be those of ulcer or intermittent claudication. These patients in the more severe type have pain incident to food and the tetanic pains like the spasm incident to the anemia. Symptoms of obstruction supervene and the patient may be operated and no obstruction discovered.

In the most severe type, number three, there is definite evidence of obstruction with hemorrhage from the bowels and vomiting, often with blood. These gradually fuse with the clinical findings of peritonitis.

This condition should be regarded as requiring surgery though a few milder cases have had a favorable outcome without surgery.

DISCUSSION

DR. O. S. FOWLER, Denver, Colo.: I wish to compliment Dr. Smith on his very interesting and lucid presentation of this condition and want to mention another phase of it—food poisoning in relation to mesenteric thrombosis. I saw three cases following eating shell fish or sea fish. It is my opinion that we should not eat sea fish out here in the middle of the continent. I have never visited a cannery, but it is my impression that the fish are not kept in a real good condition from the time they are caught until they are shipped. Ten or twelve years ago I had occasion to go to Kansas City in the middle of the summer—I remember it was a hot July day. I got off the train and walked along the gravel walk and saw the freight being put on and off the cars. I saw there a crate of fish that was being shipped, one end of which had become broken and the fish were scattered about on the gravel walk. There was evidence of there having been a little ice on them, as there were two small chunks of ice left, with several hundred pounds of fish. When I came down the following evening, I saw another similar crate of fish broken open and the fish scattered all around, and this crate also had a single chunk of ice about half the size of the crown of one's hat. If we are going to eat fish out in the middle of the continent, let's eat our own products. It is certainly repulsive that things should be shipped from the Atlantic Coast under these conditions. They should be frozen, if shipped and brought out here. So I say if we must eat these fish, let us have the fish that are caught in our own localities.

It is very important that certain other food products be pure. Dr. Smith mentioned the matter of ham. There is something about the decomposition of meat that hurriedly gives a very severe poisoning to the body and especially to the intestinal blood supply.

I want to speak further of the mesenteric venous thrombosis following operation. One of my cases required a resection of over seven feet of the small bowel. This was followed by recovery. I had another case in which over five feet was dissected, with recovery. Thus we see that the chance of recovery in operative thrombosis is better than in the poisoning of fish or meat products. They have such severe stomach symptoms almost from the start that the chances for recovery are slight. I do not know what can be done in regard to the shipping of fish, but this is an extremely important question.

I feel that we, as doctors, should prohibit our patients in the hospitals from eating fish. I have seen a number of cases of severe fish or food poisoning on Saturday mornings in the hospitals, so much so, in fact, that when I was associated with their treatment, I prohibited the giving of fish to patients in the hospital. I recall the case of an old gentleman who was ready to go home on a certain Saturday. The day preceding, which was fish day, he was given a bowl of clam chowder. On Saturday morning he had a temperature of 106. It looked as if he would certainly die. He was so ill that he was forced to remain in the hospital for seven weeks after the time he was originally ready to go home. If you will watch your patients in the hospitals, perhaps you will find that you have more enteritis cases on Saturday than any other day in the week. These fish poisonings are extremely hard to recover from: the patients are ill for a long time and it is quite a serious thing to cure.

DR. F. H. CRAIL, E. Las Vegas, N.M.: I was certainly much interested in Dr. Smith's paper because it has been my misfortune to have two cases of mesenteric thrombosis, both of which died. One of them occurred in the first portion of the duodenum and jejunum; the other in the ascending colon and part of the transverse colon.

In the first case the patient was sick primarily with what was called "la grippe," followed by sinus infection, and was then taken suddenly ill with acute abdominal pain and vomiting. The first vomiting was perfectly clear, but later the vomitus became wine colored and continued so up to the time of death. The bowels were moved a number of times with enemas in the early stages of the disease. The patient was not operated upon and lived only five or six days. Autopsy showed complete gangrene of the abdomen, going about two and a half inches beyond the bowels and extending down the duodenum seven or eight inches. The wine-colored vomiting impressed me very greatly and later on I saw another patient who had the same kind of vomiting and I made a diagnosis of mesenteric thrombosis, but, on operation, he had a large gallstone which had lodged in the duodenum. There was a good deal of scraping of the interior of the bowel so that, as the contents regurgitated into the stomach, they became wine-colored. This condition was entirely different, but the symptoms were somewhat similar.

The other case of mesenteric thrombosis was that of an elderly man. I knew that he had had a regurgitant murmur for many years. He was taken sick after eating a light supper, with what

was thought to be acute indigestion. The physician who saw him first said that he had no fever, normal pulse and principal complaint was colicky pains. I saw him on the third day. By that time, while he was vomiting, the bowel movements were light, but dark, ill-smelling material came with every enema. He had subnormal temperature from the beginning and I suspected it might be a case of mesenteric thrombosis. On opening the abdomen, gangrene in the internal ileum was so extensive that it was impossible to remove the gangrenous area. He died within two days. The symptoms were very different in this case.

DR. WILBURN SMITH (closing): I want to emphasize what Dr. Fowler has said in regard to fish poisoning. One case I remember very well. A young man, age 32, nurse, negative as far as kidneys were concerned, Wassermann negative, no evidence of vascular degeneration, therefore no possible cause for embolus. It finally leaked out that some friends of his who had eaten certain sandwiches at a picnic or party they attended had been ill and, as he had partaken freely of these sandwiches, undoubtedly his trouble was due to this source.

In regard to the extent of the gangrene, a surgeon in a London hospital had a patient come in in extreme shock—an old woman. Complete blocking was found, with gangrene from the duodenum, the cecum and the ascending colon.

I want to emphasize the fact that there are three types of cases where other pathology completely enshrouds the impending pathology:

1. In cardiac difficulties, with mitral aortic valve disease and thrombi in the heart, together with femoral thrombosis, or a severe mesenteric thrombosis.

2. Those cases in which there are intense obstructional symptoms, where the vomiting persists and yet you do not get the hematemesis, and neither do you at that stage get the blood in the stools, so you operate for intestinal obstruction.

3. Vomiting continually and the passage of blood implies the question of severe infarct or blocking of mesenteric vessels, producing obstruction.

These are the three types of cases we have to consider. In the treatment I cannot help but emphasize the fact to get in and get out quickly; do just as little as you have to do. You do not know, after you have dissected, whether the gangrene is going to go on and the thrombus continue.

SOME FUNCTIONAL DISTURBANCES OF OTHER ORGANS REFERABLE TO GALL-BLADDER

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(Read before the New Mexico Medical Society, at its Forty-sixth Annual Meeting, Albuquerque, N.M., May 10-12, 1928).

Six years ago, I appeared before your Society and discussed a paper upon the subject "Operation of Election in Cholecystitis," suggesting some technic at that time, which now is in general use.

Today, I desire to call attention to some of the symptomatic disturbances of other organs, wherein the true pathology is located in the gall-bladder.

It will not be my purpose to enter into discussion of the etiology, nor the methods of cystic infection, other than to say that each of the several methods of infection has sufficient authoritative proof to make it tenable, and, personally, I will grant that the organ may become diseased by one or more infectious routes or causes.

I shall not enter into a discussion of the treatment of cholecystitis, for the reason that I believe that a gall-bladder, once diseased, never again returns to its full normal function, and it is only a matter of time until the cure will be brought about through surgical procedure. I shall exhibit some specimens of varieties of gall-bladders preserved in normal colors from the living subjects, and permit you to judge for yourselves if a cure could have been brought about by medication.

It would be presumptuous upon my part if I attempted to suggest any symptoms new to you all, but I do hope I will be able to refresh your thoughts. In this you will recognize some of the suggestions of other writers, but, as this is a personal paper with exhibits, I shall refrain from mentioning an extended bibliography.

However, I desire to mention briefly, in a very general way, that the neighborhood of the gall-bladder and ducts, the undersurface of the liver and pylorus, possesses a wealth of sympathetic nerves, not excelled elsewhere. These nerves are not confined to the above mentioned region alone, but spread less densely all over the abdomen. At the root of the liver and common duct is the locality from which the whole abdominal sympathetic system is controlled: accordingly, anything that interferes with that innervation will interfere with the whole group of organs. The vagus nerve also supplies the liver. Reference to difficult respiration will be spoken of later in symptomotology of cholecystitis. This symptom is not common in other pathologically involved organs of the abdomen.

It has been but a decade ago that a characteristically severe paroxysmal fortnightly pain in the upper abdomen, associated with vomiting and shock, made the diagnosis of cholecystitis obvious. This syndrome is not to be overlooked, as it is almost pathognomonic of certain types; yet the fact is not to be overlooked, either, that this picture diagnosed but a very small per cent of the cases of cholecystitis, because it is present in only a few of the many who suffer from the disease. It will be upon this basis that I shall discuss allied and obscure symptoms in individuals whose real pathology is to be found in the gall-bladder.

From the standpoint of the clinical pathologist, there are about a dozen divisions of

pathological gall-bladders, yet from the surgeon's standpoint, there are really but two, namely, the acute and the chronic.

By all methods extant, the diagnosis of cholecystitis is correct in about eighty per cent of the cases, but before operation it is impossible to determine the type of disease present. Cholesterosis is one of the most common conditions found, varying in degree from the acute catarrhal to acute exacerbations of the old chronics.

I especially desire to invite your attention to gastric symptoms that are reflexes from the diseased gall-bladder. Many patients present themselves to the surgeon with a vague lot of symptoms of gastric appearance. It is common occurrence that patients will come in with a long line of symptoms of the chronic dyspeptic—this word I use with apologies, but it covers a multitude of gastric disturbances that in the past have been classed as "stomach disorders." In fact, the stomach has long suffered as the loud speaker for other diseased organs. The stomach is subject to comparatively few organic disorders, and when you exclude ulcer, tuberculosis, cancer and syphilis, you have a fairly clear field for the consideration of all other gastric disturbances as functional. Deaver has said: pain relieved temporarily by food, to begin again soon and last until the next ingestion—duodenal ulcer; pain exaggerated by the taking of food and lasting until the stomach is empty—gastric ulcer. These statements must not be taken literally as pathognomonic, but constitute a good rule to bear in mind as a pointer in furthering your investigations. We must not too hastily conclude upon such symptoms, because it has been asserted that, in cases operated for duodenal ulcer, forty per cent have been found at operation to be cases of cholecystitis. In my own practice, I have found that the percentage was not so high, and I feel that many of these diagnoses were made either before, or without, the application of all our modern diagnostic methods.

A gastric syndrome, of early satiety, feeling that the stomach was overloaded soon after the beginning of the meal; the presence of a distress rather than a pain; eructations of gas; fulness along the subcostal girdle, so great that the pressure of the clothing causes pain; a cardiac distress with difficulty in respiration; a sudden unaccountable nausea and faintness, which may cause the patient to leave the table; later, the belching of much gas; heart burn; water brash, and sometimes the spitting up of small particles of food, forms one of the most common pictures in which the gall-bladder is to be suspected. Furthermore, the patient will tell you that this condition has lasted for many years, sometimes almost disappearing, only to return again; and each succeeding attack is worse than those before. As time goes on and the gall-bladder becomes more chronic, the gastric function becomes more involved, and the patient then gives a history of a recent rapid loss of flesh. These cases are nearly all asthmatic from the beginning; they are nearly all constipated, with occasional diarrhea, but few give histories of jaundice, or skin color changes, though the patient may be mildly ichteric at the time. The loss of flesh can usually be traced to the abstinence from food and, frequently, to a very small water intake. When questioned as to why they do not take more food, the answer is universal: "It does not agree with me." You will then determine by questioning—one of the most important answers bearing upon gall-bladder diagnosis—that these cases have refrained from eating heavy proteins, fresh pork, boiled cabbage, and so forth. I believe that these cases have more frequently ceased to eat cabbage than any other article of diet, and to me it has been a key symptom in a great many difficult cases of diagnosis.

As to methods of diagnosis, allow me to insist upon a very carefully taken history. Do not be content with a vague or evasive answer to a question, but put it, over and over again, until you get a history that upon analysis will give some sort of a clinical picture, and then, by the divers methods at hand, either prove or disprove your suspicions.

In obscure cases, the very chronicity of symptoms should arouse suspicion. One cannot, from symptoms alone, predict the anatomic classification revealed at the time of operation. The gall-bladder may be packed with calculi, with only a previous gastric syndrome; it may be a thin-walled gall-bladder of the hydrops-fillae class; it may be a thickened walled organ, having engrafted upon it an acute infection known as cholesterosis; it may be an atrophic bladder of either the atonic or hypertonic type; it may be one of many other classifications, or it may appear macroscopically normal. There may be disease in the wall that is not discernible by the ordinary methods of inspection and palpation, but, whether demonstrable or not, the biliary system has not functioned properly; therefore, we must consider diseased gall-bladders not only from the organic but from the functional incapacity.

The physical findings are not always be-

set with many illuminating facts; the subjective symptom of pain upon pressure in the region of the gall-bladder does not always mean that the organ is diseased. This palpation should be made with thumbs of the two hands on opposite sides and, as pain is only a relative matter, the characteristics of the individual must be considered. The high right rectus rigidity, either with or without the complaint of pain, should not be taken too seriously, but should be differentiated from a gas-filled hepatic flexure of the colon, and the rigidity occasioned by other peritoneal irrigations.

DIFFERENTIAL DIAGNOSIS

We must differentiate from all the kidney involvements, particularly of the right side, such as renal colic, the twisting of floating kidney, pyelitis and Dietl's crisis, the appendix, epigastric hernia, visceroptosis, acute pancreatitis; from angina pectoris, acute involvement of the coverings of the heart, pneumonia and pleurisy, tabetic gastric crises, peptic ulcer, plumbism, zoster, and even ptomain poisoning.

Hastily, I will invite your attention to a few of the symptoms in an effort to clarify the picture of these things, other than cholecystitis, that might be considered.

In the renal colics, the pain usually begins in the loin and radiates down into the genitalia: there is a disturbance of the urination, with blood. The twisting of a floating ptosed kidney may closely simulate biliary colic: but the pain, while at times as severe, is more steady and less intermittent in character. Pyelitis also simulates gall-bladder colic, but has associated a urinary disturbance, with pus; vomiting is infrequent; the leukocytosis is high and fever present; to establish these facts beyond the peradventure of doubt, the urologist and laboratory should be employed. The epigastric hernias or epiploceles, occasionally give a set of acute pains similar to the pain of cholecystitis, and are nearly always causing some gastric disturbance by virtue of a generous common sympathetic nervous supply. These hernias can be palpated if the patient is put in a proper position.

Glenard's disease, or severe visceroptosis, frequently causes pain in or about the biliary region, due to traction and pylorospasm, with all the incident gastric symptoms due to a tonic pylorus; the roentgen ray should be employed as a diagnostic method in a full gastrointestinal examination with the opaque meal.

Acute pancreatitis, which, in itself, is frequently a sequela of gall-bladder disease, may simulate cholecystitis, but the pain is very much more severe and persistent, is located higher, being well up in the epigastrium, with a fulness and tenderness extending toward the left side. The patient is much more shocked, presenting a peculiar cyanotic appearance not recognized in other diseases. About the only laboratory technic of value is the finding of a higher leukocytosis, a temperature (after the first onset) and the stool examination for fats.

Angina pectoris presents a picture that one would not suspect, upon first thought, to have any overlapping symptoms with the gall-bladder, but the pain is in the epigastrium, and frequently radiates to the back, and may be accompanied by nausea or vomiting; the shock is greater. One very important point is that the blood pressure suddenly becomes very low; the patient afflicted is usually older than gall-bladder cases.

Pleurisy and pneumonia are known to present symptoms in the abdomen, especially like appendicitis and diaphragmatic involvement, causing an acute pain upon respiration: and in this connection a jaundice may follow the onset of these attacks, which might cause one to believe that there was some involvement of the biliary tracts. The best differential method is to wait a few hours and treat your patient symptomatically, and if it is pneumonia the disease will be obvious.

The tabetic crisis has misled many a surgeon to open the abdomen for cholecystitis, much to his chagrin when he later finds the knee-jerk absent and the Argyll Robertson pupil present, and the Wassermann reaction positive. The symptoms are more severe, last longer, and are but little influenced by treatment; the differential should not be considered onerous.

The peptic ulcers are very misleading unless the modern laboratory methods of diagnosis are used, and for the more than occasional mistake there is no legitimate excuse.

Plumbism presents suddenly a syndrome that is very much like some gall-bladder attacks. Three diagnostic procedures are paramount: the history, the gums and the red blood-cell examination.

Herpes zoster is infrequent, but sometimes presents a neuritis, and, according to its habits, follows closely the course of the intercostals. Sometimes, before the eruption, one might be misled, believing that a mild acute choleystitis was imminent, but if such is your suspicion, before you con-

vince yourself definitely, the eruption will have appeared.

Ptomain poisoning has had a fairly free cause, as a condition caused by the ingestion of bad foods or lead or tin oxides, and, while this condition does frequently resemble gall-bladder trouble, it is attended with diarrhea, very great prostration, thirst and a set of shock symptoms that are not very difficult to demonstrate as different from cholecystitis.

This brings us to the fact that the appendix, when diseased, sometimes causes a high right rectus rigidity, and to the further fact that there are cases in which physical findings cannot differentiate between appendix and gall-bladder without operative procedure. These appendices are usually retrocolic and high up; the pain is, however, usually lower, with more lower right rectus rigidity, and flank pain upon pressure. The leukocytes are higher; the history is of great importance.

As to the palpation of the gall-bladder, this can be done more frequently than heretofore believed, but must also be differentiated from floating kidney, hypernephroma, carcinoma of the colon and masses in the lumen of the hepatic flexure of the gut. One point in palpation, and that is that the gall-bladder will always be lower than normal, due to the lowering of the free margin of the congested liver. The fundus will feel larger and dwindle small until it gets from under the finger as it recedes beneath the liver margin. The most difficult differential when the gall-bladder is palpable, is the ptosed kidney. It has been within a month that a case was referred to my urological associate, Dr. H. T. Low, and he diagnosed and demonstrated by pyelogram that it was a hydronephrotic ptosed kidney. I could palpate a gall-bladder. The cystogram without dye proved it to be a case of cholelithiasis. Both were present in this case. Hematogenous jaundice is a physical symptom that is of but small moment and, in certain cases, difficult of recognition, though in these chronic gall-bladder cases there are skin changes always present to some degree; the laboratory should be used to determine pigments.

To refer again to the gastric symptoms: After a very careful history has been taken it will be necessary to institute laboratory methods, and the first will be either the Ewald meal, or the fractional test. One thing of great value that is determined by this procedure is the HCl content. It may be normal, hypo- or hyperacid. The normal is not very usual in chronic cholecystitis. The hypoacid stomach is very common and is usually found in asthenics, who give a long history of gastric disturbance and maintain a rapid emptying stomach with a patent pylorus. This class compose sixty per cent of the acid-disturbance gall-bladder cases, and usually have old chronic atrophic bladders that seldom contain stones. The hyperacid cases are usually found in the robust, who have had more or less recent acute, though not very distressing, attacks of stomach symptoms, gradually increasing in severity until vomiting occurs; rapid loss of flesh. These cases possess tonic pylorospasms, with long retention of food, and have acute gall-bladders engrafted upon chronic bases, and frequently containing stones. The blood count is very important in all these cases: the leukocytes are not high; the differential is not often over fifteen per cent increase, but the platelet count, as a differential in the an-acid cases, is of paramount importance in excluding pernicious anemia. The blood count is not, in itself, so important, except in its persistent low percentage, which is to be taken as significant.

The van den Burg liver function test, is all-important in determining the bilirubin content of the blood, and is significant in the study of patients with jaundice.

The duodenal tube should always be used as a diagnostic method, if for no other reason than to determine if any concentrated bile is being poured into the small intestine. But it yields other valuable information in connection with the microscopic examination of the bile obtained: Cholesterol crystals suggest gall-stones, while pus suggests infection, and so forth. As a therapeutic measure, it is of value in cholecystitis as follows: Should there be no bile from the gall-bladder, the test should be instituted again, because some authorities claim that frequently an occluded cystic duct, due to recent catarrhal involvement, will become patent by the repeated use of the magnesium sulphate in the duodenum.

As to the use of the roentgen ray: This method with the barium gastric meal shows two main types of stomach. The first will be the atonic, with but little motility and less tone, with rapid emptying, with constant dissimilar defects of the caput duodenalis. Frequently we may feel that there is an old duodenal ulcer scar causing the pyloric patency; this is usually dispelled by the absence of a constant filling defect. These cases are mostly the an-acid ones mentioned above. The second type is the one in which the motility for a short time is hyperactive, with deep systolic waves, a vigorous tone, and but little emptying, showing an unfilled cap of inconsistent con-

tour. This condition of gastric gymnastics soon ceases, and the content of the stomach lies and ferments behind a tonic pyloric spasm, sooner or later to be ejected through the mouth. Water is treated the same as food in the more severe cases. These cases are the gall-bladders in some stage of acuteness engrafted upon an old chronic base, are hyperacid, and usually have stones.

CHOLECYSTOGRAPHY

No auxiliary diagnostic method has taken root so quickly as the Graham-Cole method of cholecystography. This is partly due to the heretofore few outstanding physical signs in gall-bladder disease, and, further, to the fact that it has caused the visualization of an organ by roentgen methods, to which few before credited any great amount of diagnostic acumen. Some diagnosticians have made great claim for this method, and I will grant it is of great significance: as time and interpretation proceed, this method will find its place as one of great helpfulness and benefit, though shorn, to some degree, of the values claimed by the oversanguine.

As a basis for consideration of the important diagnostic features of the cholecystogram, let us first make a picture of the normal. The dye, whether given by mouth or intravenously, finds its way to the circulation, is collected by the liver and passes into the bile ducts. Some of it will enter the gall-bladder, there to be concentrated, and it is easily visualized on the x-ray film. The gall-bladder, in turn, will empty within certain time limits, depending upon the habitus of the patient and his contact with foods, especially fats. This is termed the negative picture.

The positive roentgenogram, while it is obtained in the same way, is an entirely different picture. Its interpretation consists of the following: A failure of the visualization; a partial and imperfect visualization; a delayed filling and emptying.

In considering these, a failure of visualization is suggestive of interference with cystic duct, such as complete obstruction, either acute or chronic, or a gall-bladder whose content will not permit any bile to pass into it, being filled with stones, gall-bladder mud, already filled with bile, or other substance.

A partial visualization would indicate a chronic gall-bladder, either not functioning in its effort to concentrate the bile, or mottled as one containing stones. In this case, bile is entering the viscus, at least in part. The imperfect visualization indicates the inability of the gall-bladder to concentrate the bile and dye; or, if it be irregular in contour, we suspect other things, such as adhesions, pressure from without, or malignancy.

The delayed filling and emptying indicates the possibility of adhesions, or partially obstructed cystic duct, or extraneous mechanical interference with the organ. In this last condition such outside interference is nearly always of the inflammatory nature due to a previous infection of the gall-bladder.

All of these positive findings are inferentially diseased organs, though they naturally vary considerably in degree.

SUMMARY

1. Cholecystitis is a very common disease, manifested by symptoms in other organs, especially the stomach.

2. A long and persistent gastric syndrome especially free from acute pain associated with the taking of food, warrants a thorough gall-bladder investigation.

3. The Ewald meal, the duodenal tube and the cholecystogram are indispensable methods of diagnosis.

4. The history is paramount, and, together with physical examination and other laboratory methods, is of the greatest importance.

DISCUSSION

DR. C. V. BRINDLEY, Temple, Texas (opening): I want to emphasize one point made by Dr. Epler. He several times mentioned the importance of history. I am a very strong believer in a detailed history, because I think a detailed history is most important to diagnosis and also the most important thing in determining what advice the patient should have—whether it is a surgical gall-bladder or should be handled by medical measures.

About a year ago I made an analysis of the history of two hundred gall-bladder cases with this particular point in view, that almost all gall-bladder disease is a sequence of some other infection, and I believe that, by going far back into the history, it will help you greatly to cinch the diagnosis. You will often find that, during a pregnancy, or shortly following a pregnancy, we have the first symptoms; often the history shows an attack of flu, with spells of colic. In analyzing these cases, we find very few persons who did not have history of rather severe respiratory infection—tonsillitis, flu or pneumonia—or pregnancy. We believe pregnancy has a very direct relationship, as, out of a series of one hundred cases, twenty were men, and eighty women. Of the eighty women, sixty-five were mothers, and forty-nine of the mothers had stones, emphasizing the fact that pregnancy has a great deal to do with gall-bladder etiology and also with the severity of the disease. I believe going far back into the history will help us in arriving at the diagnosis.

DR. O. S. FOWLER, Denver, Colo.: I want to discuss Dr. Epler's paper especially with regard to differentiating between the gall-bladder and the kidneys. I do not know whether I properly understood Dr. Epler to say that the pain in the kidney is more constant than in the gall-bladder.

I think that I differ a little on this point. I think the pain in the kidney will be severe while the kidney is out of position, but when the patient lies down on his back, or has the foot of the bed elevated, the kidney pain is much more apt to clear up than that in the gall-bladder. The gall-bladder usually gives pain if something occurs to give an obstruction severe enough to give pain; then that obstruction probably will remain for some days. There are a good many things that can give a pretty complete obstruction of the kidneys that can be relieved by change of posture of the individual. If a patient has been ill for three or four days and you are at sea between the kidney and gall-bladder, the probabilities are it is the gall-bladder, except certain diseases of the kidney, as in a complete blocking, where you would have a large or multiple abscess of the kidney; then there would be very little difficulty in differentiating between kidney and gall-bladder. To me, the kidney gives, in its emptying functions, the most distinct set of symptoms of anything I know of, and I wish to further emphasize what Dr. Brindley has said about a careful history. If you will let the patient tell his history as to how the pain comes on, what he does to bring it on, and, further, what he does to get relief, it will give a most distinct picture. A patient will give a history of pain coming on from certain activities, and usually that involves two or three definite things. If the pain comes on from jolting in automobile riding, in walking down the street, or stepping off the curb, or from horseback riding, or standing up in a wagon, or any heavy work, it is nearly always due to the kidneys, and especially if the pain lets up within a few hours or days, without the development of a serious condition. The gall-bladder, in my observation, has not been nearly so apt to clear up quickly. In the cases of marked pathology, such as Dr. Epler is showing, I think there can be no question of taking out the gall-bladder. The question arises in the borderline cases. I think we are going through a wave, right now, of cholecystectomy. The borderline cases certainly do not have such definite, positive findings. You may recall the article by Murphy, about 1908, where he reported one thousand cases of gall-stones removed without recurrence of the stones. I do not know whether he had a period of following them up completely or not, but at any rate, a man of Murphy's standing published this article. I dare say if a man came across one thousand cases today, they would not recur as we would have taken out all of them.

The stomach is a loud speaker and it has to do the talking for everything between the diaphragm and the external. It may be treated along for years with various diagnoses of stomach difficulty, when there is a very definite lesion somewhere in the abdomen and that lesion can be in practically any organ of the abdomen.

I think Dr. Epler is to be complimented on his specimens and the way in which they are mounted.

DR. CRUM EPLER (closing): I thank you for the discussion. In regard to the kidney pain Dr. Fowler spoke about, time and again I have seen people with renal colic who had been advised to lay a chair down on the floor, put the head on the chair and roll the body around on the floor, in an effort to get relief. Many of these particular types did get relief, but what I meant was the cases with persistent, continuous pain. These displaced kidneys cause pain until the patient moves so the kidney gets back in the place where it belongs.

I hope you will all examine the case of specimens on exhibit. They are mounted in glycerine and the outside cover cases are glued on by balsam, but, due to the fact that the cover glasses will not lie flat on the other glass, we put the balsam on and then put sealing wax over it as a reinforcement. This is all done prior to the injection of the glycerine, which is done with a large syringe, with small hypodermic needle. Some one asked why we used red sealing wax. There is no significance in that—we used red sealing wax simply because that happened to be the color we had in stock.

EPIDEMIC POLIOMYELITIS—A REPORT OF CASES

M. C. FRONSKE, M. D.
Flagstaff, Ariz.

(Read before the thirty-seventh annual meeting of the Arizona State Medical Association held at Tucson, Ariz., April 19-21, 1928.)

The year 1927 was characterized by an epidemic of poliomyelitis more or less general over the United States. There were more cases reported throughout the country than in any one year since 1916. Comparative figures, according to the United States Bureau of Public Health, show forty-one per 100,000 in 1916 and eight per 100,000 in 1927.

In Arizona, the official figures show seventy-six cases actually reported. Of this number, nine were in Coconino county. Five of these constitute the basis of a report which your chairman asked me to make of an outbreak which occurred in Flagstaff.

May I continue to beg your indulgence for again referring to the United States Public Health and state records for comparative facts? The peak of the epidemic was during September, both for the United States and for our own state, and more than half of all cases reported in Coconino county were during the same month.

It is not the intention of this paper to go into an elaborate study of infantile paralysis. Most of you probably had ample incentive to refresh your memories during the past year. Rather, it is my object to report in a general manner the symptoms and course of this group of cases. The interest in these cases comes from the fact that they were a consecutive number of the rather rare and very severe type of the disease. May I bring to your attention, then, some of the outstanding features of the cases observed by my colleagues and myself during the tragic two weeks that they occurred?

Let me consider first the age incidence. Two cases were between twenty-six and thirty years; the others were fourteen, thirteen and eight years of age. Not one in infancy. An interesting point in regard to the two oldest ones is that they were cousins and the brother of one of them had had infantile paralysis about seven or eight years ago

at the age of sixteen years, with final paralysis of the left arm. As I recall, these cousins had not been together for two weeks previous to their illness. They began and developed simultaneously and died within a few hours of each other. The youngest of the series took sick about six days after his return from California and contact here was not traceable to any of the local cases. This was the last case.

The two girls of thirteen and fourteen years were students in different schools and had not been in contact directly or indirectly. They began within a day and ran parallel courses.

The symptomatology in all cases was very similar. They began with malaise and headache and, in the younger ones, persistent vomiting. The temperature was high, 102 to 104 degrees, and quite constant. The pulse rate at first was very rapid, between 120 and 150, slowed down to 100 or a little slower until several hours before death, when it again became very rapid and thready. One case complained early of pain in the left ear and hoarseness and cyanosis in the same case were so extreme that diphtheria antitoxin was given because it so resembled laryngeal diphtheria.

The disturbances of respiration were the most pronounced symptoms objectively and subjectively. The respirations were slow, shallow and very irregular. They all complained of dyspnea. Cyanosis was extreme. In one case, breathing ceased entirely for periods of minutes and artificial respiration had to be resorted to repeatedly. In every case, towards the end breathing became sighing in character and there was a tendency to yawn. The sensorium was clear until near the end. One case terminated by sudden pouring out of about a quart of foamy sero-sanguinous fluid from the lungs within a period of fifteen minutes. Another stopped breathing suddenly during a period of apparent relief from the severe respiratory strain under which she had labored. Death in the four fatal cases came as a result of respiratory paralysis. There was some rigidity of the neck and all cases developed oculo-motor paralysis as manifested by strabismus and double vision. There was no paralysis of extremities in any of the cases.

Blood counts made in two showed a leucocytosis of 15,000, whereas the spinal fluid cell count in the recovered case was 500 per cubic millimeter.

Treatment was symptomatic in the first four cases, all fatal, as we were unable to secure any serum.

The last case, the eight-year-old boy, was given fifteen cubic centimeters of poliomyelitis serum, Rosenau, the very first day of sickness as manifested by fever and neck stiffness. The condition became progressively worse and the second day a similar dose was given. His condition continued to get worse. His temperature was 104 degrees, his pulse 150, and he was at the point where it seemed hopeless. At this stage ten cubic centimeters of spinal fluid was removed and thirty cubic centimeters of human immune serum was given intramuscularly. In a few hours his temperature started to drop, his pulse became slower and his eyes started to straighten. Twelve hours later another sixty cubic centimeters of human serum was given and his convalescence was very rapid. In three or four days' time he was back to normal. His recovery was complete. There was no paralysis. This case was seen with Dr. Manning and we are at a loss to know what changed the tide. To all appearances he was within an hour of death as compared with the fatal cases. Was it relief of pressure by removal of spinal fluid, or the use of the antitoxin, or both? Observers who have seen many cases report recoveries of apparently hopeless cases without any treatment before the use of antitoxin in this disease.

Thus ended, as suddenly as it began, this epidemic of cases in Flagstaff.

When the cases were diagnosed the question of closing the schools was very seriously considered by the county health officer, Dr. Manning, and, after advising with Dr. Fahlen, the superintendent of the Arizona State Board of Health, and conference with the county medical society, it was decided to discontinue schools and await developments. The schools were closed for one month, this period extending about two weeks after the recovery of the last case. Whether or not this had any influence in controlling the situation is doubtful, but it was felt to be the safest and the wisest procedure at the time. When we consider that, in every case, children from infancy to adolescence were numerously exposed to these fatal cases, we cannot help but feel that there are some unknown factors in the transmission of the disease.

In conclusion, I wish to express to Dr. G. F. Manning of Flagstaff and to the other physicians of the community, my thanks for their help in preparing this report, and to Dr. E. Payne Palmer of Phoenix for his individual aid in clearing the diagnosis of the first case. Also I wish to thank Dr. Carlson of Jerome for his prompt cooperation in sending to us the human immune serum, which we feel may have had a very important bearing in the outcome of the last case.

THE TUBERCULOSIS HANDICAP

I. D. LOEWY, M. D.
Whipple, Arizona.

(Read before the Thirty-Seventh Annual Meeting of the Arizona State Medical Association, at Tucson, Ariz., April 19-21, 1928).

The return of a tuberculosis patient to a proper economic and social status after treatment and training in an institution, or his home, is of vital importance to him, his family, and the community. If those who have secured an arrest of their lung disease encounter many difficulties, what chances has a still active, or, preferably expressed, quiescent tuberculosis patient of indefinite curability, of readjusting himself into a remunerative and useful life?

The ways and means of rehabilitating a patient with arrested tuberculosis have been worked out to a reasonably satisfactory degree. Rehabilitation begins in the institution, with graduated exercise, suitable instruction, and a work tryout before being discharged, followed by proper placement, under continued medical supervision.

Dr. Edward T. Shields, Medical Field Secretary of the National Tuberculosis Association, states: "The rehabilitation of the tuberculosis patient is essentially a medical problem, but special qualifications and training are demanded of the physician who would be successful in this work—he should have a contagious optimism combined with good judgment that will safeguard the patient in his efforts to come back."

There are three major obstacles which prevent more widespread efforts on the part of all concerned in obtaining an industrial placement of tuberculosis patients.

The first of these is phthisiophobia and is usually the greatest obstacle of all and the most difficult and expensive to overcome. It cannot be overcome except by education in an ever-increasing scope and volume.

The second is fear of reactivation on the patient's part. This is to be overcome by periodic examinations and a proper medical supervision of his work.

The third is securing suitable work. This is to be obtained by co-operation of all the agencies interested, to the end that a more humane viewpoint on the part of employers of labor may be secured.

It is not our purpose to dwell with any length upon the rehabilitation of the arrested tuberculosis patient, but to pass to the main theme of this paper, the rehabilitation of the stationary, probably hopelessly incurable, adult patient.

The selection of patients whom we may advise to go to work, requires the greatest care, and the results we obtain are directly in proportion to the care exercised.

Many persons are forced by dire necessity to work, regardless of their physical condition or their ability to stand up under the work, and in many instances they are unable, for various reasons, to obtain work properly suited to their ability. Neither are they always able to properly select their work. The results obtained, however, by a careful selection of patients, show that, with proper supervision, much can be done to assist them in overcoming their handicap.

There are two groups of patients whom we desire to encourage to return to useful life, after a definite attempt has been made to achieve an arrest of their disease.

The first group is composed of those whose financial status compels them to earn a part or the whole of their living expenses. They must either secure outside financial aid, which they are loathe to do, or go to work. This class comprises a majority.

The second group consists of those who are financially able to care for themselves without work, but their temperament, ambitions and other factors, especially their inability to secure an arrest of their disease and the futility of further efforts to secure an arrest, discourage them, and useful occupation is welcomed. This group is easily placed and soon become adjusted to their work. They can afford to lay off when necessary and ordinarily are engaged in some business pursuit of their own, and can usually call their time their own. The number in this group is obviously limited.

Both groups require the same selection as to physical ability to do work, but the second group offer no serious obstacles in placement.

Our attention will be directed toward those of the first group, for whom it is more difficult to secure proper work and working environment.

In order to attempt to convey how the proper selection is made, it is, perhaps, appropriate to review to a limited degree some of the pathological processes of adult pulmonary tuberculosis, with special reference as to how they affect our choice.

When the lung of an adult, who possesses an allergy to tuberculosis, becomes affected, it usually is manifested in one or the other upper lobe. A battle then begins between the defenses of the body and the tubercle bacilli. The defenses of the body consist of an attempt to wall off the tuberculosis area with fibrous tissue and calcareous deposits, together with an infiltration of both materials.

Some patients, principally those who have been diagnosed early, and prompt treatment instituted, may recover completely by resolution. Others, by a gradual formation of fibrous tissue and calcareous deposits, overcome their infection and reach what is known as a state of arrest of their disease. This may cover a long period of time and is the result that should be aimed at by all.

Many unfortunate patients become progressively worse in spite of all attempts aimed at their recovery and eventually they succumb.

There is, however, a rather formidable group of patients in whom the disease never quite reaches the state of arrest, in spite of very prolonged treatment. While it appears to be stationary over periods of years, yet it slowly progresses. This progression is rather minute in character, and many of these patients suffer from ten to fifty years before their actual usefulness is ended.

The selection begins in the institution, or after prolonged treatment at home. The patient is first given an extended opportunity to recover, that is, to secure an arrest. Having definitely failed to secure it, the subject of returning to work is then taken up. He must be considered from three points of view, physical, mental and financial, in the order named.

It is assumed that the patient's physical condition has been carefully studied by his physician, preferably the one under whose care he has received his treatment. All recognized means are to be exhausted in attempting to secure an arrest before discharge. The time spent in attempting to reach an arrest will naturally vary with the individual, his age, desires and means. It should not, under any condition, be less than one year and preferably should be longer. The patient should be as free as possible from all constitutional symptoms, especially as regards elevated temperature and pulse rate. The x-ray should show plenty of fibrosis, with no acute extensions. The sputum may or may not be positive. The tendency to hemorrhage should be taken into consideration. Extra-pulmonary tuberculous complications should be absent, or, if present, must be healed. In general, his physical condition and pulmonary status should conform to the classification of a quiescent case indefinitely, with no prospect of achieving an arrest. In endeavoring to convey to you the patient's physical condition, quiescent is the nearest we can come to expressing our meaning, yet this does not wholly cover it. There is, rather, a stabilization of the patient's disease. He cannot be wholly cured. He cannot be treated any further in a sanatorium or his home. He has exhausted all the scientific means at our command to effect an arrest. He is in fairly good physical condition, but usually in a very poor mental and financial one. Therefore, we have reached the parting of the ways and the most rational thing to do is to permit him to resume his place in the outside world. The patient must be tried out within the institution or home before being released. He must be thoroughly tested by graduated exercise and occupational therapy, supervised and checked, and with work comparable to that which he will attempt. His reaction, moth mental and physical, must be noted. His fatigue point must be observed, and care must be taken to adjust his work to keep it within this point. It must be emphasized that short periods of work, interposed with short periods of rest, are better than longer hours of each.

The mental condition is very important, especially toward the new lines of endeavor. Most of our patients who desire to work are the ambitious, nervous and restless class, discouraged from their long and futile attempt to secure an arrest. They require a complete readjustment in their minds to their new relation to the working world. Their ambitions and hopes, blasted by their disease, must be toned down to their new and restricted scope. Their desire to secure great success must be secondary to preservation of a life of usefulness on a lower plane than they aimed at before being taken sick with tuberculosis. Their physical activities will be much more restricted and their social aspirations thwarted. They must aim to become successful in preserving what strength and resistance they have, rather than advancing in a material or social way. Most of our failures are due to over-ambition, overwork and dissipation, because patients have failed to acknowledge to themselves their limitations and have exceeded the limits laid down for them by their advisors.

The working opportunities of those who have ample means need very little comment. There is a scarcity of occupations for the tuberculous with limited or no means, and also serious shortage of employers who will use them. Organized efforts must be made by all interested, to secure a more widespread recognition of the ability of the stabilized tuberculous person to perform useful labor. The absolute necessity for them to have an opportunity to overcome their handicap by earning pay and thus becoming self-supporting is apparent. From this

group of people, many who have done world-wide good have been developed, showing the necessity for continuing this work.

The Technical Series No. 7, pamphlet by Pattison and Jacobs, published by the National Tuberculosis Association in 1927, gives a report of various enterprises whose aim it is to provide employment for the tuberculous. This pamphlet mentions only one project that deals with patients not arrested, viz: the Altro Work Shops, N. Y.

It is believed that, while some of the patients may be left to shift for themselves to secure employment, the vast majority must have it done for them. This can be achieved only by establishing bureaus for this purpose. Communities in suitable locations are most desirable. That this is not impracticable we quote from the above mentioned pamphlet, "Sheltered employment for the tuberculous in America is in its earliest stages of development. It is probably wholesome that there are financial obstacles in the way of more rapid development. It is the hope of the authors of this monograph that it may stimulate other groups to study the need for some form of sheltered employment in their respective communities and to develop such institutions on a sound scale."

The same monograph also states: "It is also perfectly obvious from such community experience as that in Saranac Lake, Colorado Springs, or Albuquerque, New Mexico, where an overwhelming proportion of the population have tuberculosis or have come to these centers because of that disease, that the colonization of men and women handicapped with tuberculosis is not at all an impracticable proposition. Here are cities and villages of a perfectly normal American type, where it is safe to estimate that from three-quarters to nine-tenths of the business is carried on by men and women who have or have had tuberculosis.—Sheltered employment for the tuberculous is a requirement that must be reckoned with by American communities throughout the length and breadth of the United States."

To the comunities quoted above may also be added almost every town in Arizona, New Mevico, Colorado and western Texas.

Every town already established should have an agency ready to place the tuberculous in a sheltered occupation.

Contrary to popular belief, the employment should be sheltered and indoors, if at all possible. Actual labor requiring heavy lifting or carrying heavy burdens should be avoided. The more sedentary the occupation the better. Sir James Kingston Fowler, of England, states, "It used to be thought that the object of sanatorium treatment was to fit a man for 'some light occupation in the open air.' And many medical men seem to be still under this impression. Speaking generally, there are few or no such jobs to be got, and for such as there are the tuberculous man is not very likely to be chosen. By the way, do gardeners look particularly healthy? The determining factor in the choice of an occupation on discharge from a sanatorium was long since seen to be that which gave the greatest return in wages, and that in the vast majority of cases is the one in which the patient has spent his life."

It is much easier to place a patient back at his old trade or occupation, if possible, as he reaches a higher earning capacity sooner and with less effort. If, however, his occupation was too strenuous to be carried on now, he can be trained in a less active though allied occupation.

This paper is a plea for the recognition of a large group of patients who have exhausted the possibilities of an arrest or cure and, being still technically active, must be placed on a self-sustaining basis. There are too many in this class to be left to shift for themselves. We must get under way an organized movement to place him in positions and establish communities where they can provide for themselves. Much has been done in a limited way, but the time is approaching when much greater efforts must be made. This can be done only on a large scale by concerted organization.

Note: Published with the permission of the Medical Director of the U. S. Veterans' Bureau who assumes no responsibility for the opinions expressed or the conclusions drawn by the writer.

THE UTILIZATION OF AUTOPLASTIC BONE GRAFTS IN ORTHOPEDIC AND PLASTIC SURGERY

PAUL RIGNEY, M.D.
El Paso, Texas.

(Read before the El Paso County Medical Society, October 22, 1928).

Though bone has been successfully transplanted since 1809, it was not until the extensive investigations of Ollier, in 1858, that the utilization of bone transplant became of practical value in the treatment of fractures, and it is only this phase of the subject that the author wishes to present in detail at this time.

There seems no absolutely definite proof of the exact role the graft plays, and fortunately, it is not necessary that we dogmatize, on this point of histology, so far as the most practical clinical usefulness of the graft is concerned.

Whether osteoconductive or osteogenetic,

the fact remains that the autogenous transplant is not extruded from the body, that it "takes" in practically one hundred per cent of the uninfected cases where aseptic surgical technic is observed, and therefore supplies a demand that thus far no other substance has been found to meet.

CONTRA-INDICATIONS

(1) All cases where satisfactory results may be expected from the ordinary surgical treatment.

(2) Infection of a violent nature either in the field from which the transplant is to be removed or in the field into which it is to be placed.

(3) Inadequate experience and equipment.

If the same rigid technic is observed in the transplantation of bone, that is observed in abdominal surgery and many other special fields, and if a thorough knowledge of the mechanical needs to be met is applied, then the bone transplant will produce those gratifying results that are received from other fields of surgery.

SOME GENERAL INDICATIONS

(1) Non-union of a fracture of a bone.

(2) Long delayed union.

(3) To replace bone destroyed by infection or traumatism.

(4) To supply bone congenitally absent.

(5) To replace bone weakened or destroyed by either benign or malignant tumors.

(6) To correct congenital or acquired deformities.

(7) To fix in place acquired or congenitally dislocated joints.

(8) To immobilize, support and stimulate repair in spinal vertebrae whose bodies are infected with tuberculosis or other chronic infection where mechanical support is needed.

(9) In persistent non-union of the spine; traumatic spondylitis; neuropathic (Charcot) spine.

(10) In the support and immobilization in cases of tuberculosis of sacroiliac joint; to aid in the immobilization and fixation in erasion of tubercular joints.

(11) In cases of paralytic scoliosis, to support weakened spine and deviation from superincumbent weight or unbalanced muscle pull.

(12) To correct deformities in congenital clubfoot.

(13) As a substitute for all types of foreign substances used in the internal fixation of fractures.

(14) To repair openings in the cranial bones by removing the external table from an adjacent bone.

(15) To replace with the os calcis the head of the humerus or femur, that has been destroyed.

TECHNIC OF OPERATION

All of the general surgical principles as applied to preparation of operating room, the assistants and the surgeon himself will be assumed, and the special procedure outlined for a classic transplant in the treatment of an un-united transverse fracture of the shaft of a long bone.

(1) With the patient placed in the proper position on a special table with extension equipment, the field is prepared with tincture of iodine and properly walled with sheets, towels or tubes. The incision is ample in length and extends double the distance beyond the fracture over the long fragment. The skin margin is now protected (walled) with towels or sponges, as in the ordinary abdominal operation, after all bleeding has been controlled (though no tourniquet is used). Next, the line of fracture is located and cleared of all soft tissue, the ends of the fragment are cut away with a sharp osteotome, or curetted, and the fragments aligned. With the fragments fixed in this position of coaptation and alignment, the soft parts are retracted and two longitudinal incisions are made, three-eighths to one-half inch apart, through the periosteum, the entire length of the incision through the soft parts. Next, with an electric saw, the graft is cut through to the medullary canal throughout its length and the ends are freed with an osteotome or small circular saw. During the short interval of time needed to control bleeding, the grafts are both placed in normal saline of body temperature. Small holes are drilled on each side of the gutter and opposite each other, the long graft is placed across the fracture line and the short one used to fill the opposite end of the gutter, both being held in place by kangaroo tendon sutures. The periosteum is sutured with plain catgut and the wound is closed without drainage unless there is evidence of some moisture, in which case a few strands of silkworm gut are placed in the angles of the wound for drainage. External fixation is next applied to include the joint above and below the fracture.

SUMMARY

A thorough study of the investigations and reports of the various authorities indicates that the autogenous graft is unquestionably the material of choice in the internal fixation of fractures with bone grafts or foreign materials.

FEVER AND JAUNDICE

(Cabot's Case No. 14042, New England Jour. of Med., Mch. 15, 1928, page 200).

(For case history, see October issue of Southwestern Medicine, page 461).

Yuma County Medical Society.

At the October meeting of the Yuma County Medical Society, this case was discussed, the members present unanimously agreeing that the diagnosis in the case was yellow fever. Drs. Stacy, Lount, Reese, Forrest and Cain were present.

Yavapai County Medical Society and Officers of U. S. Veterans' Hospital, Whipple, Ariz. (Group II).

DR. BAYARD SULLIVAN, WHIPPLE, ARIZ.
DR. IRL THOMAS, WHIPPLE, ARIZ.

(Dr. Sullivan)

We have a case which we believe is a clear cut case of yellow fever. We have a man coming from Jamaica at a time (1897) when yellow fever was fairly prevalent throughout a good part of the world and especially through Central America, South America and the southern United States. The case began with severe sudden headache, and temperature going up to 102.5 and then a slight remission of temperature, which is characteristic of yellow fever. After a few hours the temperature went up again and the patient became jaundiced, with icterus of the conjunctiva and, finally, vomiting of blood, the attack terminating in death in four or five days. As the man gave a history of having had malaria two years previously it was thought this attack was malaria. We believe it likely that the eruption found on the body was due to quinine, which was given until he had ringing in the ears to the point of deafness.

Yellow fever, even today, is the most baffling of all diseases. Within the last few months one of the greatest investigators of the cause of yellow fever lost his life on the west coast of Africa, and one of his chief assistants lost his life a few weeks later, and the true cause of yellow fever has not yet been discovered. At one time Dr. Noguchi announced that he had discovered what he thought was the infecting organism and called it the leptospira icteroides, but it seems this organism is found not only in cases of yellow fever but also in a number of other diseases, so he was not able to demonstrate it as the true cause of yellow fever. Dr. Agramonte, in an article on this subject, stated that Dr. Noguchi had not established to his satisfaction and to the satisfaction of other critics of yellow fever that he had found the true cause; but he pays him the compliment of speaking of him as one of the most famous and earnest workers known to medicine. A few years ago it was thought that the infection was caused by the bite of the stegomyia mosquito, but Dr. Theobold has described the mosquito causing it and it does not belong to the true class of stegomyia, but to aides calopus, another species of mosquito. Another thing that was discovered was that a person having yellow fever would not transmit the disease after the third day; in other words, if the mosquito bit a man coming down with yellow fever after three days, it could not transmit the disease. And a mosquito already infected will not transmit the disease before twelve days. The United States Army Commission demonstrated very plainly the incubation period of yellow fever to be six days, rarely over that time. Very little has been determined since that time (about 1900).

We must differentiate between yellow fever and malaria in this case. At that time (1897) the examination of the blood was not perfected to the same degree it is today, but after two examinations of blood, no malaria was found. In the majority of cases of malaria the characteristic symptoms are the typical temperature, chills and sweats, and enlargement of the spleen. In the form of malaria called blackwater or malignant, there may not be these symptoms in which there is vomiting of blood, but in those cases we always see hemoglobinuria. Another similar disease seen in Southern and Central America is dengue. At the present time there is an epidemic in Greece and something like a hundred thousand people are ill with this disease. This disease is transmitted by the sand fly and is sometimes called "break-bone fever," causing severe, intense and persistent pain. The patients describe it "as though their bones will break in two," thus "break-bone fever," or dengue. This rarely, except in severe epidemics, results in death; before death the temperature goes down, and pulse and temperature run a regular course. In yellow fever a diagnostic aid is Faget's symptom or the relation between pulse and temperature. In this case the temperature ranged up to 102.5 to 103, which is characteristic of yellow fever. We do not see 104 to 105, which is very frequent in dengue and influenza. The pulse, which is full and bounding, may go up in proportion to temperature, after a slight remission in temperature, when the patient feels better, (in yellow fever), the temperature rises again but the pulse does not, and then as the

case goes on to fatal termination, as in this case, the temperature goes down and the pulse up.

Differentiating between yellow fever and the jaundice diseases. In acute infectious jaundice, or Weil's disease, the cause of which is the leptospira hemorrhagica, the symptoms come on more gradually and the jaundice is very marked, while in yellow fever the jaundice is not marked. In malignant jaundice or yellow atrophy of the liver, we find, as the name suggests, atrophy of the liver, and icterus or jaundice is very marked. We must differentiate influenza, because of the sudden onset, but in that there should have been typical symptoms and a direct ratio between pulse and temperature. We must also differetiate typhoid fever, which begins more slowly and is not accompanied by severe aching pains, as in this case; also, in typhoid there is the agglutination test and the Diazo reaction is nearly always present. Considering the acute eruptive fevers, especially measles and scarlet fever, we must rely upon the character of the skin eruption which we do not have in this case.

I think I have differentiated from practically all diseases with which yellow fever may be confused, and will sum up the symptoms again: sudden onset, severe headache, chills, achy pains, the peculiar ratio between pulse and temperature with the temperature never so high as in other diseases; temperature goes up, slight remission, up again, and as fatal termination approaches, temperature goes down and pulse goes up; the slight jaundice noticed early and never very marked; the gastro-intestinal symptoms, of slight tenderness in abdomen, not especially characteristic, small amount of blood in vomitus and later on there may be the so-called black vomit; bright red flecks of blood in the vomitus is a characteristic of yellow fever; albuminuria, and not infrequently anuria, which is one of the final stages of the disease. The albuminuria occurs very early in yellow fever, while in typhoid, acute yellow atrophy, or infectious jaundice, it comes on only in the later stage.

These are the cardinal symptoms of yellow fever, and the history of a man being in Jamaica where yellow fever was fairly prevalent at that time, supports our diagnosis. As to whether this was complicated or associated with malaria, we are not able to say, the enlarged liver and enlarged spleen might suggest that.

(Dr. Thomas)

The case has been very well covered by Dr. Sullivan. There are only one or two points I would like to call attention to. In the history the hemoglobin is given as 92, leukocytes 7,800, which is characteristic of yellow fever. Dr. Agramonte, in an article, states that in most cases the hemoglobin is not less than 90 and may go as high as 105.

The temperature and pulse ratio has been gone into. Another peculiar thing is that when the temperature decreases, the headache ceases, which is one of the diagnostic points. When the temperature became normal the patient said he felt better. At that time evidently most of the quinine had been eliminated and he did not have ringing in his ears. In all of these cases we find much albumin in the urine, and they usually die with suppression of urine, or anuria. In looking up the pathology of yellow fever, I noticed one or two things that may be of interest: there is rarely any characteristic lesion, but there is the characteristic chamois liver, about the color of chamois skin, with areas of fatty degeneration, and practically the same thing, fatty areas in the kidney. In the history this is spoken of as finding fatty casts in the urine which are likely to have come from these degenerated areas in the kidney.

All the other points have been covered by Dr. Sullivan. Our diagnosis is yellow fever.

Discussion by Massachusetts General Hospital.

GEORGE C. SHATTUCK, M.D.

The history of this case points certainly to acute infection. I have not read the necropsy report, but it has been hinted to me that this might be a case of yellow fever. If we are to make that diagnosis we must first of all do what we can to exclude malaria, spirochetal jaundice and dengue.

It is very difficult on the evidence presented here to exclude malaria. A negative blood examination after the taking of quinine for several days wou'd have no diagnostic value. The leukocyte count is normal. One might expect leukopenia with an excess of large mononuclears in malaria. This does not occur so regularly in the early stages as in the later stages of malaria. His fever has evidently been of an irregular character, with sudden onset and apparently a remission and a recurrence of fever on admission to the hospital. That would go well enough with malaria. Toward the end of the examination the spleen is said not to have been much enlarged. An enlarged spleen goes well with most forms of malaria, but it is by no means constant with aestivo-autumnal malaria. On the other hand it is not expected in yellow fever. Malaria might perhaps have been excluded by splenic puncture and examination of the smear from the spleen, if there had been no pigment and no malarial plasmodia found. The rash that the patient had was atypical and does not associate itself with malaria. It is difficult to classify. An important point against malaria is the failure of quinine to control the fever. On the other hand there was vomiting, and we do not know how much quinine was ab-

sorbed. It does not seem that on the evidence given we can with certainty exclude malaria.

We might then take dengue. The sudden onset, the remission of temperature, the headache and chilly sensations all go well enough with that. I find no mention of severe pains in the back and legs which are so common with dengue. They are also common with yellow fever. The rash was not like that of dengue; jaundice is rare in dengue and death is unusual.

Spirochetal jaundice is not ordinarily such an acute disease. It is not as a rule characterized by remissions of the fever. It is not however a disease with which I am to any extent familiar, and I should not be able with certainty to exclude it on the evidence given. The urine seems not to have been examined for spirochetes.

I will then turn to the possibility of yellow fever in this case. This patient came from Jamaica in 1897, before the time when the mode of transmission of yellow fever was known, and when yellow fever was very prevalent in the West Indies. The disease is characterized by sudden onset as in this case. It frequently shows remissions of temperature after the second or third day of the disease and exacerbations of fever later on. It is a disease which is often rapidly fatal, sometimes within a very few days, generally within ten or eleven days. The deaths in the earlier period are from overwhelming toxemia. Those in the later stage are apt to be associated with uremia, kidney changes being common in yellow fever and urine being scanty when the kidney has been much damaged. Jaundice goes very well with yellow fever and is rare in dengue. Some of the other more characteristic features of yellow fever such as the marked flushing of the face and injection of the eyes which one looks for in the earlier days of the disease are not recorded as having been present. However the patient was not in hospital at the time and we cannot trust much to hearsay for the early signs. The frontal headache in the beginning and the vomiting go well with yellow fever. The profuse perspiration is common, although a dry skin is perhaps more frequent. One important point here is the pulse rate. At the onset the pulse rate was 140. One of the features one looks for in yellow fever is continued high or rising temperature associated with a falling pulse. In other words, in yellow fever after a few days a marked discrepancy between pulse rate and temperature develops. The chart on the last days shows a pulse ranging between 88 and 60 with a temperature ranging in the same interval from 103° to 101.6°. The highest dot on the temperature curve is associated with the lowest in the pulse record. The pulse clearly shows a tendency to fall lower than one would expect it to fall with a temperature of that sort. That would go well with a diagnosis of yellow fever. The skin manifestations of yellow fever are in no way characteristic. Rashes of various kinds are found. That which the patient had would not be inconsistent. The vomiting in yellow fever is characteristically black from the presence of blood pigment. Jaundice generally develops after a few days and bile may appear in the urine. Marked albuminuria is expected. On the whole the diagnosis of yellow fever seems the most probable in this case.

Dr. Edward L. Young: Is immediate muscular rigidity characteristic of yellow fever?

Dr. Shattuck: Rigor mortis is marked in death from yellow fever. The albuminuria would go well with yellow fever. One of the features of yellow fever is that albuminuria begins very early in the disease.

Dr. Cabot: Is there more albuminuria than in other infections?

Dr. Shattuck: Yes, there are large amounts of albumin in the urine in yellow fever.

Dr. Cabot: Will you say something as to the present occurrence of yellow fever in different parts of the world?

Dr. Shattuck: In the past yellow fever has been widely endemic along the coast of South America, throughout the West Indies, in Central America and in Mexico. It has frequently invaded the seaports of this country. Severe epidemics of yellow fever developed in Atlantic ports during the eighteenth and nineteenth centuries. In 1793 there was a very bad epidemic in Philadelphia in which the mortality was nearly 10 per cent. of the population. There have been epidemics also in Boston, Providence and Newburyport and in some of the other New England seaports. We find yellow fever fairly common today on the west coast of Africa, and it occasionally appears in parts of northern Brazil. It no longer extends up the Amazon valley as it formerly did. The last Central American outbreak of yellow fever, according to U. S. Public Health Reports Vol. 40 Pt. 1, p. 582, occurred in San Salvador in 1924. There were 77 cases and 28 recorded deaths.

There is some question whether yellow fever in Africa is the same as that in this country and whether it originated in Africa or in this country. The usual opinion is that the disease is the same in Africa as it is here and that it originated in Africa. Apparently it is showing a tendency to spread in Africa toward the interior where formerly it was confined pretty much to the coast. It is curious that in Africa there have not been any severe and widespread epidemics of yellow fever such as have occurred on this side of the Atlantic. There was a small epidemic recently in Monrovia in Liberia with eight deaths. A great deal of work on yellow fever has been done in Lagos on the coast of Nigeria where there is a laboratory which has been financed by the Rockefeller funds. The British also have a laboratory at Lagos. Dr. Adrian Stokes, a well-known and very able Irish pathologist, recently died in Lagos while working on the transmission of yellow fever to monkeys.

The etiology of yellow fever is now again in doubt.) In 1901 mosquito transmission was demonstrated by Reed and his associates. A few years ago the work of Noguchi indicated that leptospira icteroides was the cause of yellow fever. A few however continued to doubt. The recent work of Drs. Sellards, Theiler, and Gay in the Department of Tropical Medicine of the Harvard Medical School threw grave doubts upon the validity of Noguchi's conclusions. Theiler was unable to distinguish leptospira icteroides from leptospira icterohaemorrhagiae, and Sellards stated that leptospira is not the cause of yellow fever.

The still more recent work of Professor Oskar Klotz of Toronto, who was sent by the Rockefeller Institute to study the yellow fever of West Africa, materially strengthens the view of Sellards.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD).

Yellow fever.

ANATOMIC DIAGNOSIS

1. **Primary fatal lesion.**
   Yellow fever.
2. **Secondary or terminal lesions.**
   Extensive fatty metamorphosis of the liver.
   Fatty degeneration of the liver cells.
   Icterus.
   Acute lymphadenitis of mesenteric lymph glands.
   Edema and congestion of the lungs.

Acute degeneration of the kidneys with some fatty degeneration of cells.

3. **Historical landmarks.**

Old pleural adhesions.

Dr. Tracy B. Mallory: The anotomical findings in this case are those ordinarily found in yellow fever and were considered by Dr. Councilman at the time as entirely characteristic and as confirming the diagnosis. There was a very slight degree of jaundice evident post mortem. The head and brain were negative. The chest contents were entirely negative. The liver was somewhat small, weighing 1,057 grams. Yellow and red mottling was visible through the liver capsule. On section this was still more evident. Microscopic examination showed it to be due to very extensive degeneration of large amounts of fat. A similar type of degeneration was found in the kidney tubules. The glomeruli were negative. No lesions were found in the intestinal tract or stomach. Very extensive bacteriological work was done, yielding, as might have been expected, negative results.

Dr. Cabot: Could you say that this pathological picture is all in the liver and kidneys?

Dr. Mallory: I believe hemorrhagic erosions and hemorrhages of the stomach are fairly usual, are they not, Dr. Shattuck?

Dr. Shattuck: Yes, they are fairly common.

Dr. Cabot: In the liver and kidneys there is nothing that does not occur in other diseases. Is it the association with an acute infection that makes one able to say that this is yellow fever?

Dr. Mallory: I know so little about yellow fever I should not like to say.

Dr. Richard B. King: Is the jaundice always hemolytic?

Dr. Shattuck: At the beginning it is always hemolytic. Later there is liver damage.

ASCITES AT SEVENTEEN MONTHS

(Case No. 14271, Case Records of the Massachusetts General Hospital, N. Eng. J. of Med., Aug. 23, 1928, p. 380.

For copy of history, see Southwestern Medicine for October, page 461.

Yuma County Medical Society

At the October meeting of the Yuma County Medical Society, this case was discussed, with diagnostic conclusions as follows:

Dr. Knotts: Syphilis.

Dr. Stacy: Mediastinal growth and syphilis.

Dr. Lount: Meckel's diverticulum.

Dr. Cain: Meckel's divertiulum and pneumonia.

Yavapai County Medical Society and Officers of U. S. Veterans Bureau Hospital, Whipple, Ariz. (Group III.)

DR. J. D. BROOKS, WHIPPLE, ARIZ.
DR. R. N. LOONEY, PRESCOTT, ARIZ.
DR. C. R. K. SWETNAM, PRESCOTT, ARIZ.

(Dr. Brooks)

We have an infant who, up to six months ago, we are told was normal. At the age of one year this child developed an intra-abdominal condition which produced enlargement, noticeable swelling, listlessness and lethargy, and was so ill she was taken to the hospital where she was kept for three weeks with apparently no benefit. After a period at home she slightly improved but never entirely recovered. Four weeks before this last entrance to hospital she developed similar symptoms, had occasional vomiting, rapid heart, and perhaps some headache. She improved again until this present admission, at which time she had a large and protuberant abdomen, listlessness and a noxious odor. The child was ill nourished, ill-developed, with protuberand abdomen, which prevented palpation of contents, though there was dulness which moved, indicating fluid. Also, if you recall the history, she had tuberculosis on both paternal and maternal sides of the family. There is no direct contact cited, but there is that possibility always in view. Also the child was taken care of by an outside woman while her mother was at work. From the appearance of the child and the fact that she had this terrific odor, excoriations around the buttocks, vaginitis, etc., she evidently had very poor care. What exposure she had from this outside influence we cannot say. Another thing mentioned is enlarged tonsils (and probably adenoids in addition). The physical examination shows an evidently rachitic child, and although they say the ear drums were normal, the history speaks of a sticky brown discharge from both ears at the age of three months. This apparently was superficial and not an otitis, or the drums could not have been normal later. The discharge from the umbilicus is described as a foul-smelling, brown fluid with bubbles. Laboratory examinations of this showed bacillus coli and Gram positive cocci predominating, but no growth. Following the administration of carmine by capsule, the dye appeared through the umbilicus in a little over twenty-two hours, and in the stool in less than twenty-four hours, which would indicate communication between the sinus and the intestinal canal, yet x-ray report states the abdomen was negative. A surgeon called to see this child diagnosed Meckel's diverticulum, advised operation but stated it was too hazardous to do because of the extreme weakness and illness of the baby, and it was postponed. Laboratory examinations of both blood and spinal fluid were negative for syphilis. The blood shows leukocytosis, (over 11,000 whites, with 85 per cent polys.), which indicates bacteriological infection of some kind. The urine is negative: in fact everything is negative even the spinal fluid except that it is under excess pressure and contains the maximum amount

of sugar. Perhaps the surgeon was right and there was Meckel's diverticulum draining through the umbilicus; it is a possibility. The protuberant abdomen, with fluid, rachitic appearance, would indicate tuberculous peritonitis. There is also the possibility of malignant disease, with tumor mass in polys. Intestinal obstruction, I think, is merely to be mentioned, as it could have been only very slight, if at all, because everything went through the child, or at least the barium went through. Appendicitis is another thing always to be taken into consideration in abdominal conditions in children. Whether the appendix was a factor in this case, I do not know. Actinomycosis is another thing to be suggested because of the plaque in the mouth. The child had a terminal pneumonia, which was undoubtedly the immediate cause of death. The primary cause or causes I will leave to the discussion of my colleagues.

(Dr. Looney)

If we were called to see a child of seventeen months who had been sick for six months, the most prominent symptoms being abdominal distention, masses felt in the abdomen, listlessness, and umbilical sinus with foul-smelling discharge containing bacillus coli, what would we think of in the abdominal cavity that might cause these symptoms? First, we would no doubt think of Meckel's diverticulum. A consultant made that diagnosis in this case. Meckel's diverticulum with an umbilical fistula leading down to the gut would no doubt cause the foul-smelling fluid and some of the symptoms we have in this case. In my own practice I have seen one case with a Meckel's diverticulum that caused obstruction. This was relieved by surgery and the case recovered. Later on developed umbilical fistula, and when operated to relieve this condition developed general peritonitis and died. Second, we would probably think of appendicitis. The appendix in a child of this age is high up, and a ruptured appendix might cause the symptoms we have in this case. Foreign bodies in the intestinal tract, and volvulus, I think can be passed up with only a mention, as in these conditions, we have constant vomiting. Intussusception might cause some of the symptoms but in this condition there would likely be bloody stools. Sarcoma of the peritoneum or the bowels is to be thought of, but sarcoma is very rare in a child of this age and with the absence of more characteristic symptoms, I think we will eliminate saroma. Then we come to tuberculosis peritonitis, which may appear in any age of life. The focus of infection may be near or it may be far, as from lymph nodes, tuberculous lungs, bones, etc. In tuberculous peritonitis the patient loses strength and weight and becomes listless, and I believe, in all cases we have ascites, which no doubt we have in this case, as the history says there was shifting dulness over the abdomen. Masses of varying sizes are usually felt in tuberculous peritonitis, which may be due to tuberculous lymph glands, or inflammatory condition and kinking or contraction of the omentum. The reaction of tuberculin in tuberculous peritonitis or any form of tuberculosis, in a patient as sick as this child was, is very unreliable. In advanced cases of tuberculous peritonitis some portion of the inflammatory process may develop into ulceration, abscess and fistula. I believe we can eliminate syphilis as we have negative Wassermann reaction, and a spinal fluid with negative colloid of gold. We can not rule out the possibility of Meckel's diverticulum with general septicemia, and brain abscess.

(Dr. Swetnam)

We feel we have had a difficult case because so many of the findings and symptoms seem to us to be contradictory. We have a baby of seventeen months who began six months ago to be sick. The condition came on suddenly, with distended abdomen, lethargy, and possibly a convulsion. After that the child had vomiting and apparently pain in the head. Upon admission to hospital it was in very poor condition, the ribs and enlarged bosses of the head indicating rickets. The child was very ill, had lost weight, had fever, and fairly rapid pulse. The fever ran from 98.4 to 102 daily for ten days or more, indicating infection. Another thing which probably indicates septic condition is the areas of the skin. There is also a leukocytosis. We know there is an umbilical sinus connected with the intestinal tract at some place, proven by the dye coming through. We know that the spinal fluid was under very high pressure, 210 to 220 in a child of seventeen months —Nelson says it should be about 70. The examination of the spinal fluid is very disappointing, so nearly negative, maximum amount of sugar, practically normal protein, globulin increased. Increased globulin indicates only chronic inflammation, not necessarily meningitis, but we have it increased and the fluid under pressure. We must find something that will account for the abdominal condition and at the same time something in the brain or spinal cord that will account for the increased amount of fluid and high pressure, but where the chemical contents of the spinal fluid are

normal. The cell count is only slightly increased—only six they tell us. A distended abdomen and fluid, with feeling of listlessness, certainly indicates some kind of peritonitis. If it is tuberculous we would expect cerebro-spinal irritation of the same kind. There are two things in the examinations which are absolutely against tuberculous meningitis—the high sugar and very few cells. Brain abscess before it ruptures into the spinal canal would give us that spinal picture, high sugar and no cells, fluid clear and sterile. The leukocytosis would also correspond. The picture is typical of brain abscess—beginning with acute symptoms, then quiescent over a period, and suddenly flaring up again. Brain abscess, in most cases, is a result of otitis. There is none in this case as far as we know, but there may have been, as the history quotes an earlier condition of discharge from the ears. This may have gone on to the brain and caused abscess; that form of otitis would cause abscess rather than meningitis. When the infection travels through the bone by eroding its own canal, then penetrates the dura it is apt to cause abscess, and when it enters through a preformed canal such as the internal auditory meatus, it is more apt to cause meningitis. That is a possibility, but we can not read it in when we are told that both ear drums are normal. Another cause of brain abscess is pyemia; we can read in pyemia with a very definite point of infection in the abdomen with chronic irritation in the glands to cause pressure, which is proven by the edema in the feet and hands. We have symptoms in the spinal cord that we do not believe can be accounted for in any other way than by brain abscess.

Our diagnosis is a probable Meckel's diverticulum, a peritonitis, pyemia and brain abscess. (The brain abscess did not have a chance to break into the spinal canal because the child died of terminal pneumonia).

Discussion at the Massachusetts General Hospital.

RICHARD C. CABOT, M. D.

This is the sort of family history that we still take that I think is a waste of pen, ink, and paper. To put down tuberculosis in persons to whom the child was not exposed is according to our present knowledge putting down something that is irrelevant.

I do not know the significance of the white plaque. Sick babies often have such things.

Harrison's groove, etc.,—in other words, rickets.

Shifting dullness, of course, if it is correct, and it is a very easy sign to find—is positive proof of fluid in the abdomen of a young child.

We do not know where the masses are.

Miss Painter: They were apparently fecal masses.

Dr. Cabot: I do not know much about children, but I should think the negative reaction to tuberculin would be of importance in ruling out tuberculosis, unless it is a very virulent process.

In the barium examination I suppose they were thinking of perforated peptic ulcer with peritonitis. There is nothing remarkable in this examination so far as I know.

I do not see how this surgeon made the diagnosis of Meckel's diverticulum before barium was given.

The action of the dye seems to prove that the umbilical sinus is connected with the gastro-intestinal tract.

I do not see that we have evidence of anything wrong from this lumbar puncture fluid.

DIFFERENTIAL DIAGNOSIS

I am out of my beat here. I do not know what is the matter with the baby. We seem o have evidence of a connection between the intestine and the umbilicus, and that seems to point towards a Meckel's diverticulum. There is no evidence of intestinal obstruction, which is the only harm that a Meckel's diverticulum gives, and we have apparently fluid in the abdomen, which I do not know how to explain.

Has the child tuberculous peritonitis? That would explain the fever and the fluid in the abdomen. Ordinarily one feels masses other than fecal masses when a child has a peritoneal tuberculosis, masses especially apt to be around the cecum.

Why are legs edematous? Well, just fluid in the abdomen, if it is marked, by its interference with leg circulation will give edema of the legs. I do not know any better explanation than that.

Could we have a thrombosed vena cava? That would give fluid in the abdomen and edema of the legs. It seems, however, as if it would give more fulminating symptoms than we have here, and I do not see why it should be thrombosed anyway.

Have the vaginitis and vulvitis anything to do with the case? Conceivably, of course, a peritonitis might arise from that region. This might be the fluid of such a peritonitis. But that is a rare thing. The vast majority of those cases do nothing serious to the organism and do not result in peritonitis. I do not believe it.

Almost all children who have anything die of bronchopneumonia. On general principles I think I had better say the child had bronchopneumonia, because almost every dying child does. But that it not a rational diagnosis. It is not the cause of death. It is simply something that babies get, after they are weakened by something else.

So I do not know what the baby has. It does not seem clearly like anything that I have named, though I cannot rule out tuberculous peritonitis.

A student: How about the tuberculin test in tuberculous peritonitis?

Dr. Cabot: That is against us.

A Student: Would you have to consider congenital syphilis?

Dr. Cabot: I do not see why.

A Student: If you had cirrhosis.

Dr. Cabot: Yes, syphilitic cirrhosis and fluid in the abdomen. But I think we ought to have other signs. I do not believe anybody could make a diagnosis of congenital syphilis with nothing in the skin, bones, or teeth or about the anus. I think we can rule it out. Syphilis is the most dangerous diagnosis one can make with a pathologist about. He almost never backs it up unless it is in the aorta.

A Student: Do you make anything here of the fact that the dye did not appear in the stools up to that time?

Dr. Cabot: No, I do not know enough about the test to make any inference from that.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Tuberculous peritonitis.
Meckel's diverticulum.

DR. RICHARD C. CABOT'S DIAGNOSIS

Possibly tuberculous peritonitis.

ANATOMIC DIAGNOSIS

Tuberculosis of the lung.
Tuberculous salpingitis.
Tuberculous peritonitis.
Tuberculous ulcer of the ileum.
Abscess of the peritoneal cavity.
Umbilical fistula.
Miliary tuberculosis.

Dr. Mallory: The case is one of tuberculosis with tuberculous peritonitis playing the most important role. There was no Meckel's diverticulum. Also the tuberculous peritonitis was of the dry character, not of the fluid one. The fluid found in the abdomen was restricted to the anterior half. The omentum had walled off the abdominal cavity into two halves, the anterior inferior part of which was a large abscess cavity filled with fecal material, apparently the result of perforation of a small tuberculous ulcer of the ileum. So that the dye which had been fed the patient passed through the ulcer of the ileum into this abscess caviy in the abdominal wall and from there out through the umbilicus. Except for this abscess cavity it was a typical dry type of tuberculous peritonitis with wide-spread adhesions and the surfaces studded with tubercles.

The immediate source of the peritonitis appeared to be a bilateral tuberculous salpingitis. That seemed to be the oldest tuberculous focus except for one in the lung, which probably represents the primary source of infection. Of course the tubular ones were not primary. The course of infection in this case I imagine to be this: a primary infection in the lung going back many months or perhaps half a year, metastatic foci in the tubes at about the same time, exension from that to the peritoneum, miliary tuberculosis following, and then perforation of a tuberculous focus in the ileum and the formation of a septic abscess in the peritoneal cavity, with discharge through the umbilicus.

PROCEEDINGS OF THE FOURTEENTH ANNUAL MEETING OF THE MEDICAL AND SURGICAL ASSOCIATION OF THE SOUTHWEST, HELD AT ALBUQUERQUE, N. M., NOVEMBER 8-10, 1928.

The Fourteenth Annual Meeting of the Medical and Surgical Association of the Southwest was called to order in the Assembly Room of the Elks' Club, Albuquerque, N. M., by Dr. P. G. Cornish, Jr., First Vice-President, on Thursday morning, November 8, 1928, at 10 a. m.

As only one meeting of the Association had previously been held in Albuquerque, in the fourteen years of its existence, and that a number of years ago, the Program Committee had worked assiduously to make this a banner affair, and had expected the Mayor to be on hand to honor the assemblage with an address of welcome. However, the opening of the hunting season and the attendant call of the wild proved too alluring, and therefore Dr. Cornish, in a few choice words, greeted the visiting members on behalf of the Bernalillo County Medical Society, of which he is President, and expressed the hope that all would have a good time and enjoy themselves to the utmost. Dr. Cornish said "that inasmuch as Dr. Crouse, the President of this Association, has been ill for some time and is absolutely unable to make any trips or take any part in the meeting, it has consequently fallen upon me to take his place. The absence of Dr. Crouse will be very much felt, as he is a man of great ability, of rare energy, and his personality and work in conducting the affairs of this Association have been of the greatest importance ever since its organization. We miss him tremendously and I only wish that he could be with us on this occasion, but inasmuch as he is not, I shall endeavor to preside in his place."

The first number of the program was a lecture by Dr. William Engelbach, Endocrinologist, Professor of Medicine, St. Louis University, St. Louis, Mo. Dr. Engelbach had no prepared address, but delivered an extemporaneous lecture which covered, he said, "some of the simple, pretty well established endocrine disorders, considering only the diagnosis—particularly early diagnosis—and the treatment of these disorders." He first discussed pituitary disorders, stressing particularly the insufficiencies of the pituitary glands. Many interesting slides were shown to illustrate the various points under discussion. One picture arousing special comment, showed two cases—one with underfunction and almost complete absence of the anterior lobe of the pituitary gland, while the other showed just exactly the reverse condition. The doctor called particular attention to the fact that in pituitarism there is a tendency to separation of the teeth, while in thyroidism there is malposition of the teeth, and in hypogonadism, we have small incisors, so that we can usually tell what group a patient belongs in by looking at the teeth. In regard to treatment, Dr. Engelbach said that great strides forward had been made in the past few years and that this depended upon the substitution, as well as can be done, of the affected glands.

Adjournment for luncheon.

The first lecture of the afternoon session was delivered by Dr. H. J. Ullman, Director, Department of Radiology and Cancer Research, Cottage Hospital, Santa Barbara, Cal., who chose as his subject: "Necessity for Team Work in the Treatment of Cancer." Dr. Ullman's prepared paper will be published complete in an early number of SOUTHWESTERN MEDICINE.

The next lecturer, Dr. Dennis Crile, Orthopedic Surgeon, Chicago, Ill., had an extremely interesting paper on the subject "Complications of Pott's Fracture," which covered the ground thoroughly and comprehensively. Illustrated by slides, simple and extreme types of complications were shown.

Dr. Verne C. Hunt, Professor of Surgery, University of Minnesota Medical School, was the next speaker, presenting a paper entitled "Suprapubic Prostatectomy: Its Hazards and Factors of Safety." Indications for operation, preparation of patients for operation and principles of the operation were described fully by Dr. Hunt. His paper, complete, will be published in an early issue of SOUTHWESTERN MEDICINE.

Dr. Franklin P. Gengenbach, Professor of Pediatrics, University of Colorado Medical School, Denver, Colo., then delivered a highly entertaining and intellectual lecture on "The Relationship of Pediatrics and Psychiatry." Th doctor stated his paper was the joint work of Dr. Franklin G. Ebaugh, of Denver, and himself.

In summarizing, Dr. Gengenbach asserted that "a closer association can be developed between the pediatrician and psychiatrist by:

(1) Consideration of the entire child and his emotional needs.

(2) The teaching of mental hygiene as a part of the regular course in pediatrics in medical school, supplemented by clinics and outpatient work.

(3) The pediatrician should take a leading part in the mental hygiene movement and thereby be a forceful ally in the preventive work in the field of psychiatry.

(4) The pediatrician of the future will need to develop facilities in his practice for the study of the complete child, such as having a social worker and a special nurse for this purpose. Routine mental measurements should be a part of the developmental studies already perfected by the pediatrician.

(5) Both specialties can better serve the public health requirements of the community by closer cooperation and understanding of the guiding principles of behavior study and modification."

Friday, November 9th

The scientific session was called to order at 10 a. m. by Dr. W. Warner Watkins (Phoenix), who presided in the absence of Dr. P. G. Cornish, Jr., unable to be present on account of illness.

The first speaker of the morning was Dr. J. A. Myers, Chief of the Tuberculosis Service, Minneapolis General Hospital, Minneapolis, Minn. In his extemporaneous speech on the subject "Tuberculosis in Children," Dr. Myers stated that "our views concerning tuberculosis among children have changed a great deal since a good bit of attention has been given to the disease in childhood." He cited the fact that about eight years ago the Commissioner of Health in Minneapolis who was also Director of Hygiene of the Board of Education, and he, saw a problem in the schools due to tuberculosis among the children, and the reason for being interested especially was that there were 123 boys and girls, of school age, who were excluded from the schools owing to a diagnosis of tuberculosis. Out of this research work and survey, arose the establishment of a special school where these children could be trained while also being treated for tuberculosis, and this has given opportunity for the study of a number of cases both negative and positive. So far, 6,000 girls and boys have been examined, such routine examination consisting of history, physical examination, tuberculin tests, and stereoscopic films in every case. Of the 6,000 girls and boys examined, 3,025 were positive to tuberculin. Positive histories of exposure were given by 1,271. The lecture was illustrated with charts showing particular cases which had come under observation and featured the remarkable work which is being done for the children at the school.

Dr. Karl Menninger, Neuropsychiatrist, Menninger Clinic, Topeka, Kansas, next gave an intensely interesting discourse, choosing as his subject "Psychiatric Study of Four Murderers." In his characteristic way, with graphic presentation of the four cases, Dr. Menninger held the audience spell-bound, and his repeated statement that a psychiatrist is one who endeavors to keep a criminal in confinement under proper observation, rather than one who, as the public seemingly think, tries to get him out of confinement, to escape the consequences of his crime, was accepted.

Dr. N. H. Brush, Neuropsychiatrist, Cottage Hospital, Santa Barbara, Cal., followed Dr. Menninger, reading a paper on "The Internist and the Diagnosis of General Paresis."

The next speaker was Dr. William Engelbach, St. Louis, Mo., who lectured extemporaneously on "Early Diagnosis and Preventive Treatment of Endocrine Disorders." Dr. Engelbach stated that, in order to prevent mental defectiveness in hypothyroidism, we have to go back to the development age of the child; we will have to diagnose hypothyroidism before children are born, in the embryo life.

Adjournment for luncheon.

The first speaker of the afternoon was Dr. Fred Speik, Professor of Medicine, Uni-

versity of Southern California, Los Angeles, Cal., and his subject, "Peptic Ulcer and Associates." Dr. Speik brought out the fact that the great problem in the medical and surgical treatment of peptic ulcer is the frequency of the association of lesions of the viscera of the portal lymphatic system.

The next speaker, Dr. F. P. Gengenbach, Denver, Colo., gave an extemporaneous lecture on the subject "Infant Feeding and Nutritional Cases." Dr. Gengenbach stated that something may be wrong from the standpoint of food intake. "We are all familiar with the lack of iodine in the diet leading to certain disturbances in the thyroid; we are also familiar with the fact that we are made of what we eat; the fetus grows from whatever food the mother takes, and if her food is unbalanced and improper, the fetus does not grow and develop into a normal child at birth, and that emphasizes the necessity of looking after the diet of the mother while she is pregnant. Is it not possible we have not discovered some lack of food element in the mother and in the baby that may lead to some of these other abnormalities?" He also spoke on the advantages accruing to babies from breast feeding.

Dr. Verne C. Hunt, of the Mayo Clinic, Rochester, Minn., the next lecturer, presented a paper entitled "Cortical Abscess of the Kidney," in which he brought out that infection of the kidney is usually one of two types and is transmitted to the kidneys by way of the urinary passages, or is hematogenous in origin and carried by way of the circulation from remote foci of infection.

The afternoon session was concluded with a lecture by Dr. H. J. Ullmann, Santa Barbara, Cal., on "Lead in the Treatment of Cancer."

This paper will be published in an early edition of SOUTHWESTERN MEDICINE.

Saturday, November 10th

Dr. Simon Jesberg, Bronchoscopist, Los Angeles, Cal., was the first speaker at the morning session, presenting an extemporaneous lecture, illustrated with various slides, on "Foreign Bodies in Respiratory and Upper Digestive Tract." He described bronchoscope treatment and took pleasure in answering many questions which were asked in regard to methods of removing various foreign bodies.

The next speaker, Dr. John W. Shuman, Professor of Medicine, College of Medical Evangelists, Los Angeles, Cal., presented a paper entitled "Lung Abscess." He started the ball rolling by showing x-ray plates inverted and asking the audience to make the diagnosis. A number of interesting cases were shown on the screen.

The next speaker, Dr. F. P. Miller, Medical Director, Dore Sanatorium, Monrovia, Cal., presented a paper on "Thoracoplasty." He stated that there were twenty thousand cases in the United States in which surgical intervention is indicated, if they can be chosen, and declared the most common complication to be cardiac failure.

Dr. J. A. Myers, Minneapolis, Minn., who was the next speaker, gave an extemporaneous discussion on "Tuberculosis in Children." He described further the methods used with the children in attendance at the school in Minneapolis.

He also said: "From our research work, it has been ascertained that fifty per cent more girls die between the ages of fifteen and nineteen from tuberculosis than boys, and seventy-five per cent more girls between the ages of nineteen and twenty-four. If we will look at the mortality curves from such countries as England and Wales, we will find them gradually declining at that age, so we feel it is a very definite problem that seems to be peculiar to this country. A study of our files has made us wonder why so many of our girls have been infected. We find the energy exposure is tremendous. It is not the school curriculum, but the most tremendous expenditure of energy after school hours, at night. I think we have not given proper education in the schools. Young people are so apt to be swept away by the various fads. Many of these girls absolutely refuse to eat foods which they think will build them up; they have very little reserve, and what they have is soon used up in dancing and running around. This, in a great measure, is responsible for these alarming figures which I have given." This closed the scientific session.

Entertainment

Members and guests were royally entertained by the Bernalillo County Medical Society and the Ladies' Auxiliary of that Society. Dr. H. L. Brehmer, Chairman of the Entertainment Committee, together with the ladies of the Auxiliary, were responsible for a number of enjoyable functions.

The smoker, given Thursday evening in the Indain Room of the Franciscan Hotel, and the dinner dance given at the same place on Friday evening, were well attended and both gala affairs.

Albuquerque, always beautiful and picturesque, seemed especially so at this season of the year, with the fine fall weather, and the trees a golden yellow, and as the scientific sessions were excellent in every way, with a well balanced program, the meeting was thoroughly enjoyed by those in attendance.

Executive Business Session

The Executive Business Session was held in the Indian Room of the Franciscan Hotel, the meeting being called to order at 1:30 p. m., November 10, by Dr. P. G. Cornish, Jr., First Vice-President.

Owing to the necessity for haste, due to departure of several members on an early train, it was decided to forego all business except that of an emergent nature.

Motion was made, seconded and carried that at future annual meetings of the Association, a registration fee of $5 be charged, such fee to be used by the program committee getting up the meeting.

Invitations were extended by Phoenix, Ariz., and El Paso, Texas, for the next annual meeting. As El Paso had had the meeting in 1927, it was agreed that the meeting for 1929 should be held in Phoenix.

Election of officers followed with the result that the new slate is composed of:

President—Dr. P. J. Cornish, Jr., Albuquerque, N. M.

First Vice-President—Dr. J. M. Greer, Phoenix, Ariz.

Second Vice-President—Dr. J. A. Rawlings, El Paso, Texas.

Secretary-Treasurer — Dr. W. Warner Watkins, Phoenix, Ariz.

Board of Trustees—Dr. Hugh Crouse, El Paso, Texas; Dr. Willis W. Paite, El Paso, Texas; Dr. Willard Smith, Phoenix, Ariz.

Motion was made, seconded and passed that the Chair appoint a committee to draw up resolutions to be incorporated in the minutes of this Society and that copies be sent to the families of the deceased members.

Motion was made, seconded and passed that a resolution be drawn up by this committee and sent to Mrs. Crouse, expressing the regret of the Association at the illness of Dr. Crouse, and extending best wishes.

Motion was made, seconded and passed that the Secretary be instructed to write a personal letter to each of the visiting doctors who lectured at the meeting, thanking them for their interest and the prominent part taken by them.

Motion was made, seconded and passed that a vote of thanks be tendered to the Albuquerque members for their hospitality and entertainment.

The Resolutions Committee was appointed by the Chair, and consisted of Dr. M. K. Wylder (Albuquerque), Dr. J. A. Rawlings (El Paso). and Dr. C. A. Thomas (Tucson).

No further business being brought before the meeting, motion to adjourn was entertained at 2 p. m.

SECTIONAL MEETING OF THE COLLEGE OF SURGEONS

(District of Texas, Arizona and New Mexico.)

Phoenix, February 14 and 15.

The following preliminary announcement of the Sectional Meeting of the College of Surgeons for the states of Texas, New Mexico and Arizona, to be held in Phoenix, on February 14 and 15, has been given out by the Local Committee on Arrangements, of which Dr. Win Wylie is chairman and Dr. E. Payne Palmer is secretary:-

Headquarters will be at the Westward Ho Hotel. where all Fellows of the College, candidates and visitors will register.

First Day, (Feb. 14).

Clinics at the hospitals by Fellows of the College in Maricopa County.

Special clinic and clinical address on fractures by Dr. Charles L. Scudder of Boston, Mass.

Special conference with representatives from hospitals, including doctors, superintendents and lay men interested in hospital work, dealing with problems of the small hospital,—by Dr. MacEachern.

Hospital meeting and Conference, and meeting of the Fellows of the College.

Community Health Meeting for the general public, at which time moving pictures, lantern slides and popular talks will be given.

Second Day, February 15.

Clinics at the hospitals by Fellows of the College in Maricopa County.

Special clinic on Cancer, by Dr. R. B. Greenough of Boston, Mass., with clinical address on Cancer.

Hospital Round Table Conference, conducted for those interested in the details of hospital management.

Scientific Meeting in the afternoon, at which time four or five scientific papers will be given. The general medical profession of the three states are invited to this meeting.

Special emphasis will be laid on the public meeting on the evening of February 14, as one of the important functions of the College is the giving of dependable information to the public on medical questions, particularly in the fields of surgery and hospital care.

More complete details will be given in our January issue.

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AMERICAN COLLEGE OF SURGEONS

(Sectional Meeting in Phoenix)

About two years ago, efforts were made by the Fellows of the American College of Surgeons in the southwest, to secure a realignment of the districts in which the sectional meetings of the College are held, so that Arizona, New Mexico and western Texas would comprise a single district. Owing to the objections of the Fellows living in other sections of Texas, the College did not see fit to divide that state. At the meeting of College in Boston in October, the matter was again brought up by Dr. E. P. Palmer, Governor of the College for Arizona. Fellows from Texas again objected to the division of their state, but expressed themselves as perfectly willing for the entire state to be in a district which would include Arizona and New Mexico. To this proposal the Fellows from Arizona agreed, provided the meeting for 1929 be held in Phoenix. This is the arrangement which was perfected, and the Sectional meeting of the College for the new district of Arizona, New Mexico and Texas will be held in Phoenix on February 14 and 15. This should be the most pretentious medical gathering yet held in Arizona. Dr. Charles L. Scudder of Boston will hold the clinical conference on Fractures, and Dr. R. B. Greenough of Boston will conduct the clinical conference on Cancer. Dr. Franklin Martin, president of the College will be present, and other prominent surgeons will participate. This will be the first of a series of sectional meetings in the west, and it is expected that it will be one of the best. Moving pictures and lantern slide exhibits will be brought by the officers of the College for the public meeting. Further details of the meeting will be given in the January issue of this journal.

MALTA FEVER AND INFECTIOUS ABORTION

The proven close similarity between malta fever of goats and infectious abortion in cattle, first demonstrated by Evans in 1918 and since confirmed by many workers, should be a matter of more concern to the medical profession and public health officials of the southwest than appears to be the case. Malta fever is known to be prevalent among the goats of the southwest (Arizona, New Mexico and western Texas) and to be endemic in the human population; also, wherever any investigation of cattle has been made in this district, infectious abortion has been shown to be even more common. Just how frequently abortus infection is transmitted to man is conjectural, but many indications suggest that it occurs more frequently than the medical practitioners realize. After Gentry and Ferenbaugh had proved the existence of malta fever in Texas in 1911 and Yount reported cases in Arizona in 1912, little attention was given the subject in the southwest, until the Phoenix outbreak in 1922 brought the question sharply to the front.

Infectious abortion was known to be present in the dairy herds of the southwest prior to the demonstration of any kinship between the B. melitensis and B. abortus. The establishment of this relationship has not been given the attention it deserves, either in public health circles nor in clinical practice, in view of the fact that we have both infections constantly present in endemic form. Little is found in American medical publications on this subject, although the European medical journals give it due prominence and the veterinary publications of the United States are full of the subject.

Hadley (Vet. Med., Mch., 1928), in discussing the economic phases from the standpoint of the dairy industry, gives four

possible courses of action, as follows:- (1) Do nothing, and wait for the disease to run its course and die out. (2) Sell off the infected animals as fast as the disease develops; this plan is applicable to a herd hitherto free from infection, following the first outbreak of the disease. (3) Develop an abortion-free herd by gradually segregating the non-infected from the infected. (4) Immune herd, by keeping the herd intact and immunizing the non-infected members. It is impossible to discuss here the advantages and disadvantages of these possible courses, from the dairying standpoint.

Of more immediate interest to the medical profession and the public are the questions of possible dangers through the use of raw milk. These questions are pertinent and it is only fair to say that the profession, as yet, has no adequate answer to give. We know that B. melitensis of malta fever is a highly infectious organism, very dangerous to handle even by skilled workers in the laboratory, while the B. abortus of infectious abortion is of low virulence and slight infectivity to man. Yet, when once grown the organisms are hardly distinguishable, and we do not yet know under what circumstances the B. abortus takes on added virulence. Since the demonstration that B. abortus and B. melitensis are closely akin, if not identical, many instances of proven transmission of the infection to man through milk or dairy products, have been reported. However, many authorities have raised the very pertinent question, that, since infectious abortion is so prevalent in cattle, why does it not infect man oftener, if it is identical with malta fever? This question deserves a better answer than we are able to give it, though there are three possible suggestions.

Bassett-Smith (J. State Med., Sept., 1927) does not admit the identity of the organisms; he states that massive doses of abortus will produce the disease in man, but suggests as more likely that many cattle have contracted real malta fever from goats, and the supposed instances of abortus infection from cattle are, in reality, malta fever.

The suggestion that the infrequency of human abortus infection may be due to absence of sufficiently massive dose finds some confirmation in a paper by Huddleson (J. Mich. State Med. Soc., Mch., 1927). He states that malta fever produces a mastitis in the goat as the result of which enormous numbers of organisms are excreted in the milk, frequently as high as 25,000,000 per c.c. On the other hand, infectious abortion in cattle produces a mastitis with relatively few organisms in the milk, never more than 10,000 per c.c. and usually only a few hundreds. The comparative danger from the two diseases may, therefore, be due not so much to the relative virulence of the organisms, as to the number of organisms ingested with the milk.

The third suggestion is that undulant fever from aborbus may be much more frequent than we have heretofore supposed, since a low grade fever without disabling symptoms may pass almost unrecognized. This is possible even in true malta fever, as was shown by the survey by Lake in the Phoenix epidemic of 1922, when he found several ambulant cases who would not admit illness. This last suggestion is a very important one for the southwest, where many people with lowgrade febrile disease come for climatic treatment. The very conditions for which they seek relief in the southwest (tuberculosis, arthritis, etc.) would very readily mask an accompanying secondary melitensis or abortus infection. Two tuberculous patients in the Phoenix epidemic gave positive agglutination in high dilutions, but their physicians would not admit the presence of any other infection than tuberculosis.

We are making no pretense at answering the questions herein raised, but offer them as worthy the serious attention of clinicians and public health officials in the southwest.

DR. JACOB S. EASTERDAY

Dr. J. S. Easterday, a pioneer physician of Albuquerque, N. M., for the past thirty-five years, died on November 29. Dr. Easterday was born in 1854, and was a graduate of the University of Louisville School of Medicine in 1894, coming to Albuquerque in the same year. He has practiced continuously in that city since.

DR. JOHN BRYAN McNALLY

Dr. J. B. McNally, a pioneer of Yavapai County and one of the best known citizens in the county's development, died at his home in Prescott on November 23, from influenza. Dr. McNally was born in 1866. He graduated from the Hahnemann Medical College in San Francisco in 1896, and from the College of Physicians and Surgeons of San Francisco in 1902. He located in Prescott in 1895, and has been for many years the local surgeon of the Santa Fe Railroad. He has been a faithful member of the Yavapai County Medical Society, which organization has passed the following resolutions of respect:

WHEREAS: Death has claimed Dr. John Bryan McNally who for thirty-two years had practiced medicine in Prescott, Arizona, and who was a charter member of the Yavapai County Medical Society; and

WHEREAS: In life he was honored by his fellow practitioners for his ethical methods, revered by his patients, whether rich or poor, for the skill and kindness in the sick room, and cherished by his many acquaintances for his gentlemanly conduct; and

WHEREAS: His unselfish devotion to his profession prompted him to serve suffering humanity often at the expense of his own physical welfare, saving others but not himself;

THEREFORE, BE IT RESOLVED: That his passing registers the loss of a loving husband, a devoted father, an able physician, a loyal friend, a staunch citizen and a conscientious Christian; and

That we, the members of the Yavapai County Medical Society, join with the members of his family, his patients,, his friends and citizens of this community in our mutual sorrow; and

THAT the heartfelt sympathy and condolence of this Society be extended to his family; and

THAT these Resolutions be spread on the minutes of this Society, a copy sent to the grieving family, and copies furnished the Daily Press, Southwestern Medicine and The Journal of the American Medical Association.

W. I. LINN,
H. T. SOUTHWORTH,
J. H. ALLEN,
Committee.

EL PASO COUNTY MEDICAL SOCIETY

October 22, 1928.

CASE REPORT

LESLIE M. SMITH, M.D.

Lupus erythematosus disseminatus.

An American woman aged 38, who had had two plaques of lupus erythematosus removed by solid CO_2 two years ago, presented large, scaly, violaceous areas on face, arms, backs of hands, and chest, of four months duration. The eruption was accompanied by some burning sensation. Examination revealed a chronic pelvic infection and infection about the roots of eight teeth, the latter discovered by x-ray. Extraction of these teeth was advised, and the disease during the series of extractions would seem to incriminate the teeth as playing an important part in the etiology of this case. Operative treatment for the pelvic condition was refused. The dentist was advised to do the extractions in series on account of the danger of causing the disease to flare up. One or two teeth were extracted at a sitting with sittings a week or more apart. After each extraction there was marked exacerbation of the disease, and this was allowed to subside before the next operation. After the last extraction the disease subsided somewhat, and 50 mg. of gold and sodium thio-sulphate was given. This caused an exacerbation, but after eight days this had subsided, and a second injection was given. Since then there have been no exacerbations, and the patient is taking weekly injections of 100 mg., and the disease is disappearing. Extreme care must be exercised in these cases in the removal of foci, and in treatment, as there is danger of generalization of the disease and a fatal outcome. It is best to remove all suspicious foci before beginning the gold injections.

UPPER OBSTRUCTIVE UROPATHY AND THE PROBLEMS PRESENTED

A. W. MULTHAUF, M. D.

(An Abstract).

Forms of upper obstructive uropathy were reviewed, and the role they played in the differential diagnosis of the symptom complex referable to the abdomen, was discussed. Special emphasis was placed on the conservative surgery of the renal and ureteral anomalies encountered. Lantern slides were shown of the obstructive uropathy in question, and two unusual cases were presented.

The paper was discussed by Dr. K. D. Lynch who brought out the importance of the necessity of freeing the ure'er of adhesion bands in the operation for nephroptosis.

Dr. R. B. Homan showed several x-ray pictures of conditions associated with extensive calcification of the pulmonic tissues. Some were old tuberculous lesions with massive as well as diffuse calcification. One case of aneurysm with heavy calcium deposits was also exhibited.

PERSONALS AND NEWS

DR. MARY LAWSON NEFF, of Los Angeles, will be in Phoenix during the first week in January, at the Hotel Adams. Dr. Neff visits Phoenix frequently for consultation work in her specialty of functional and organic nervous diseases.

DR. R. N. LOONEY, of Prescott, has been appointed physician to the Pioneers' Home, to succeed Dr. J. B. McNally, deceased.

DR. MYRON O. BLAKESLEE, recently appointed superintendent for the new training school for mental defectives at Las Lunas, N. M., has taken up his work at the institution which will be ready for occupancy January 1st. The first duty of the new superintendent will be to select fifty persons from the 153 applicants already on hand, as the first unit of the institution will only accommodate fifty.

DRS. C. H. LAUGHARN, W. R. QUINN and E. J. GUNGLE, of Greenlee County, are said to have been made defendants in a suit for $30,000 for the death of a boy, upon whom operation was performed in September 1927. We do not have the full details of this report, but usually such suits have little basis and rarely come to trial.

DR. A. T. SMITH of Yuma, a recent arrival in that community, is receiving considerable undesirable publicity over his arrest and imprisonment on charge of violation of the Mann act. One of the reports in the Yuma, Arizona Sun states that this man is reported by the American Medical Association as not being a medical graduate, so far as they are able to ascertain.

DR. GEORGE N. FLEMING, of San Miguel County, N. M., has been appointed health officer for the county, but his appointment has been refused confirmation by Dr. George S. Luckett, director of the Department of Public Health.

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- ☐ Diet in the Treatment of Diabetes
- ☐ The Value of Gelatine in Infant and Child Feeding
- ☐ The Health Value of Knox Sparkling Gelatine

Name_____ Address_____

City_____ State_____

DR. JOHN W. STACY, of Yuma, Arizona, of the firm of Ketcherside, Lount and Stacy, was married in Glendale, Ariz., on November 10, to Miss Mary Daisy Wampler of that city. Dr. Stacy served as resident physician at the Good Samaritan Hospital in Phoenix for several months, leaving there to enter into practice in Yuma.

DR. P. M. SHAVER has resigned as health of-DR. F. H. JOHNSON, of Carrizoz, will be appointed to succeed him.

THE BAPTIST SANITORIUM in El Paso will not be closed, as was rumored following the defalcation of C. S. Carnes, treasurer of the Southern Baptist Convention board, with more than a million dollars deficit. Dr. Vermillion, superintendent of the sanatorium, states that the institution will remain open and continue its work as heretofore.

THE SOUTHSIDE HOSPITAL at Mesa, Ariz., is conducting a financial drive for $10,000, for new equipment and to provide a surplus for running expenses. One of the first donations was from Mr. Fred H. Bixby and was for $1,000.

THE MORRIS-SQUIBB HOSPITAL, at Safford, was damaged somewhat and a nurse seriously burned, when a dish of alcohol ignited and then upset, about the middle of November. Two men who were visiting patients in the hospital, extinguished the burning clothing of the nurse, and also the fire in the hospital.

DR. D. B. WILLIAMS, chief of the division of county health work for the New Mexico Bureau of Public Health, the resignation to take effect on January first, because the state has failed to provide funds to meet his salary and expenses. Dr. Williams has been a very valuable man, and the state will find it a very short-sighted policy to allow such an official to leave them because of the failure to see that health is purchasable.

GOOD SAMARITAN HOSPITAL OF PHOENIX

(September Staff Meeting)

The Medical and Surgical Staff of the Good Samaritan Hospital met Monday evening, Sept. 24, 8 p. m., at the hospital, for their regular monthly meeting with twenty-one in attendance.

Dr. Stacey reported upon the deaths for the past two months, as follows:

Case 2402, male, 43 years of age. Tuberculosis of the third, fourth and fifth lumbar vertebrae. Developed pulmonary tuberculosis (in hospital?), died 147 days later. History of asthma four to five years, pleurisy eight months ago. Temperature 99 degrees daily for three months, occasional flare-ups for day or so, to 100 degrees. He then ran a stormy course until death. No x-ray records during stay in hospital. Record does not show just what diagnosis was based on. No autopsy.

Case 3488. No history obtainable. Male brought in from auto camp. Had apparently been drinking heavily. Several carbuncles and areas of skin infection. He seemed to be toxic; very dull mentally; temp. 106.8 axillary at death. Leucocytes 17,400, 88 polys. Occasional pus and blood cells in urine; slight trace of albumin. No autopsy.

Case 3511, baby, five days old. Temp. 108 degrees, pulse 280, quickly dropped to 180; blue color. Four to six weeks overdue; fontanelles

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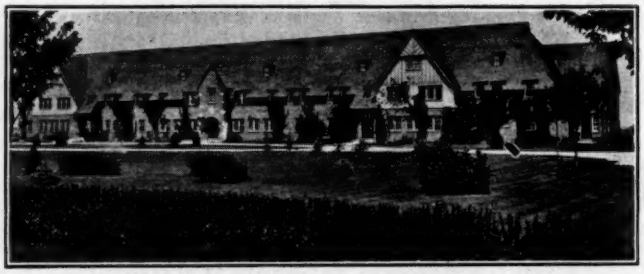

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closed. Instrumental delivery with low forceps. Seemed normal until day before death. No other history obtainable. Died about twelve hours later. Diagnosis, acute indigestion, heat contributory. (Impression: Birth injuries? intracephalic?) No autopsy.

Case 3438: Automobile accident, fractured skull. Symptoms, bleeding from nose and right ear, pupils fixed, right larger than left, delirious at first, later comatose. Died third day. Cysternal puncture performed. X-rays showed fracture of right side of skull with separation of right temporal and parietal bones.

Case 3533, baby, three years of age, bowel obstruction. Seen by one doctor, then transferred to another who realized serious condition. Moribund on admission; too ill for operation. Temperature 106 on admission. Died five hours after admission. X-ray findings pointed to obstruction at or near ileo-cecal valve. Positive acetone and diacetic. Blood count, 4,800. No autopsy.

Case 3547, woman, 64 years of age. Dermoid cyst of left ovary. Suspected malignancy of uterus. Ovary and uterus removed, cyst contained hair and muscle fibres. Patient's temperature and pulse rose rapidly after surgery and she died in forty hours. No autopsy.

Case 3573, male. Hemorrhage. Comatose on admission, temperature 108.6 axillary; blood pressure 180; pulse good. Temperature came down to 103 but next day rose again. Never regained consciousness. No autopsy.

Case 3582, male, 59 years of age. Uremia, cardiac hypertrophy and dilatation. Had been ill one month, was en route East against doctor's orders. Brought in in extremis and in comatose condition. Extreme arteriosclerosis; heart greatly enlarged; extreme edema. Died in fifteen minutes. No autopsy.

Case 3589, male. Heat prostration. Expired in fifteen minutes. Comatose, very cyanotic; temperature 107.6 axillary. Examination negative. No autopsy.

Case 3604, male, 58 years of age. Heat prostration. No history except feeling dizzy for several days. Comatose on admission. Temperature 109 rectal. Lived thirteen hours; never regained consciousness. No autopsy.

Case 3505, male. Hypertrophied prostate, uremia, myocarditis and hypostatic pneumonia. Suprapubic cystomy; died four days later. In hospital one month and ten days. Temp. 106 degrees before death. No autopsy.

Case 3706, male, 32 years, from county jail. Asthma, myocarditis and nephritis. Failed rapidly, died third day. No autopsy.

Case 3656, male, 67. Carcinomatosis of gall bladder and lungs. Lived one week. Vague history of chest trouble for three years. Very ill on admission. Palpable mass in upper abdomen. Fluid removed from left pleural cavity. X-ray showed total density over one base and patching over left lung. Diaphragm immobile; shadows suggest malignant changes. No autopsy.

Case 3700, male, 64. Ruptured gall bladder. Comatose on admission; cyanotic. Died thirty hours after admission. Post mortem showed 280 stones and peritonitis.

Case 3729, male, 32. Fractured ribs and scalp wound. Blood in pleural cavity. Subdermal emphysema; delirious at time of admission, soon became comatose.

Case 3747, male, very elderly. Myocardial failure, urinary suppression, extreme anasarca, (eyelids), ascites, rales in lungs. No autopsy.

Case 3735, male, 18 years of age. Fractured skull and femur. Concussion of brain, comatose; soon died.

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Case 3748, negro, age 30. Gunshot wound in abdomen and arm. To surgery and twelve holes in bowel repaired; local anesthesia.

Case 3749, male, accidental poisoning, probably coal tar product; no history, died in one hour; never conscious. No autopsy.

Case 3765, female, 26 years of age. Salpingitis, bilateral. Operated; many adhesions. Died the following morning, apparently from shock. Thin drainage on dressings which resembled urine. Possibility of bladder injury at operation. No autopsy.

Case 3769, male, 45 years of age. Cellulitis spreading up right arm to shoulder. Streptococcic infection; opened freely. No pus obtained. No autopsy.

Case 3781, female, 44 years of age. Lysol poisoning. Took four oz. lysol shortly before admission. Recovered from shock; died two days later apparently from absorption, with high fever. No autopsy.

Case 3782, male, 49 years of age. Tubercular peritonitis with general edema. Tuberculous testicle removed one year ago; began to go down rapidly. Ascites, edema of limbs and body. Died two days later. No autopsy.

Case 3852 was discussed by DR. VICTOR RANDOLPH, as follows:

Female, 27 years of age, married. Some time after child birth, Sept. 1927, patient had good deal of pain in the legs, diagnosed at the time as sciatica. Had indefinite "rheumatic" pains. In March, 1928, she had considerable fever for a time associated with "rheumatic" pains. Was called intestinal flu. In May she was still having similar troubles. She was seen by C. B. Palmer about this time and he noted spots on the skin of a "purpuric" nature. She was having fever at times and some joint pain. In spite of these she made a trip to Chicago to visit relatives and show them the baby. Shortly after arrival there she began to run considerable fever and to feel weak. She had considerable palpitation. She had also transitory sore spots in her fingers and toes which would last a day or so and then go away. She was troubled with considerable cough without much expectoration. After a good many weeks in different hospitals in and near Chicago she was finally advised to return to Arizona on account of her lungs, although she was told that she had a bad heart. I saw her first on Aug. 15, 1928. At that time she had a troublesome dry cough with slight expectoration, insufficient to obtain adequate sample for examination. Her principal symptoms were continuous high fever, ranging 101 to 103, slight dyspnea on exertion, weakness, frequent nausea, night sweats, and marked palpitation of the heart. The bowels were regular, but she had at first a rather sharp pain in the left upper quadrant. The menstruations were irregular. She was kept strictly in bed, but no progress was noted in her condition. The nausea and vomiting were somewhat relieved, and the pain in the upper left quadrant went away. Indefinite points of tenderness were found in the fingers and toes at times, but there was no discoloration of the skin. Search was made for petechiae on every occasion, but none were noted. There was at this time leucocytosis, albumin in the urine with hyaline and granular casts and pus cells but no blood cells. Blood culture negative. X-ray report is as follows: Roent-

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genogram of this chest shows cardiac enlargement. There are infiltration densities through the lung parenchyma of the upper lobe of each side with smooth rounded densities in the upper right lobe representing small areas of consolidation. Shadows in the left apex are fairly dense. While these shadows represent some type of lung involvement, they are not characteristic of tuberculosis.

The urine showed granular casts and trace of albumen, but was otherwise negative. WBC., 16,000, 80 per cent polys. and there was no growth on blood culture. The spinal fluid was negative.

The autopsy report which was done by Dr. Mills is as follows: Body of a young woman, short of stature, frail and emaciated. No operative scars or bruises present on body. On removing the calvarium a large blood clot was found covering the right temporo-sphenoidal lobe, extending upwards over the motor area and also over the base into the median fissure. The right temporo-sphenoidal lobe was softened and incision into this area revealed an area of softening with abscess formation involving the greater portion of the lobe. This area is about one and one-half inches in diameter but the outlines are indistinct as there is no evidence of formation of an abscess wall. The other portions of the brain do not reveal any gross pathology. There is no diffuse meningitis. There is no hemorrhage into any of the ventricles.

Chest: The pericardium contains three ounces of straw-colored fluid, not purulent; the walls of the left ventricle are much more hypertrophied; the heart is enlarged to twice its normal size. The tricuspid valve is normal in size; there is some thickening of the valve leaflets, but no recent vegetation or nodules; there is very marked, friable vegetation on the mitral valve leaflets; these extend on to the mural endocardium of the left ventricle and auricle, chiefly of the auricle; aortic valve negative.

Lungs; no free pleural fluid; left lung free from pathology. The right lung is densely adherent to the lateral wall in the region of the inter-lobar fissure. There are, also, many old dense adhesions between the lobes. There is a hypostatic condition in the right lower lobe. This part of the lung still contains air and a section from it floats in water.

Abdomen: Right kidney is normal in size; there is a small red infarct in the cortex. Left kidney is one and one-half times the size of the right. There is a large infarct in the middle part of the cortex and one small cyst near the upper pole. Gall bladder is negative. Liver is negative. Spleen somewhat lobulated, normal in size with numerous infarcts in which there is beginning necrosis. The appendix is post-cecal, sharply kinked. The cecum is so large that with the ascending colon it occupied the larger part of the abdomen; its contents apparently were mostly gaseous. Remainder of the gastro-intestinal tract is negative.

Autopsy tissues: Sections from wall of left auricle show inflammatory deposit on the surface firmly organized and with more recent inflammatory deposit on surface. This layer is very flexible and contains polynuclear cells. Sections of margin of mitral valve with portion of vegetation show fairly recent inflammatory deposition on the surface with round and polynuclear cell infiltration. Some of deeper portions show fibrosis and small areas of calcification. These changes are evidently those of chronic endocarditis with superimposed recent endocarditis. Sections of kidney through one of the red infarcts show marked hemorrhagic extravasation, round cell infiltration and extensive exfoliation of the tubular epithelium.

Dr. Stroud said that it was his opinion that after

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a heart was inflamed the organisms might lie there for indefinite periods and become foci of infection for subsequent invasions. The original focus might have been the tonsils or some place else.

Dr. O. H. Brown said that he disagreed with Dr. Stroud in that the heart valve could be focus of infection. The fact that the valve has had one involvement makes it easy for subsequent invasion, but it seems unlikely that it would be a harbor of bacteria for any great length of time. There are other places in the body that are more likely to harbor bacteria for long periods of time and these places are sometimes very difficult to discover. He said that he recalled a young man who had a serious heart involvement as well as a serious kidney condition for which at first no focus of infection could be discovered. After repeated examinations it was finally decided that the tonsils were the focus of infection. There was redness of the anterior pillar, but otherwise the tonsils appeared absolutely innocent. The man became so seriously ill that he had convulsions and bloody urine for many weeks. His heart dilated so that it looked like he would die; subsequently he improved and was allowed to go home. Then he developed an acute tonsillitis and the kidney and heart both became as bad as when he was at the hospital. The tonsils had white patches upon them; these were pointed out to the family and physicians in the case and it required no argument to get them removed. The tonsils were removed and the boy made a speedy recovery. The lesson from the case was that one should not be contented until he finds the focus of infection.

Dr. Randolph said the tonsils in the case he reported had been removed 8 to 12 years ago. He believed that the infection from the heart was not likely to light up again without subsequent invasion from other foci.

Case 3608 was discussed by DR. F. C. JORDAN: Female baby, born July 26, 1928. Normal delivery, cried spontaneously and appeared normal with exception of the right foot and ankle. These were entirely denuded of skin except a strip of normal skin on the superior and inferior sides of the foot. There was a sharp line of demarkation between the healthy skin and the denuded area. There seemed to have been a constriction around the ankle as if the cord had been rapped around it. The shutting off of part of the blood supply and sloughing of the skin below could have been caused by a constriction around the ankle. The denuded area was beefy red in color and bled easily if touched. There was one small vesicle about one-fourth inch in diameter upon the other leg. Otherwise the skin appeared normal. Sterile dressings were put upon the foot and ankle; these were kept on with difficulty due to the rubbing of the feet together. Within 24 hours, large blebs had developed upon the other leg and foot, both hands and forearms, and upon the lower gums extending underneath the tongue. The lips were also excoriated and it was necessary to feed the baby with a medicine dropper. The blebs were punctured and ammoniated mercury ointment (one per cent) applied. Pasteboard cuffs were put on outside of the dressings to keep the parts from being rubbed by each other. She was brought to the hospital on the third day, and the affected parts dressed twice daily. She was given sulpharsphenamine intramuscularly as it looked more like a congenital syphilis. This, however, was not repeated for Wassermann on both mother and child were negative and culture from the blebs showed a pure culture of staphylococcus. There was a gradual improvement in the skin condition. The temperature which had been 103.2 on the second day in the hospital, gradually came down to a max-

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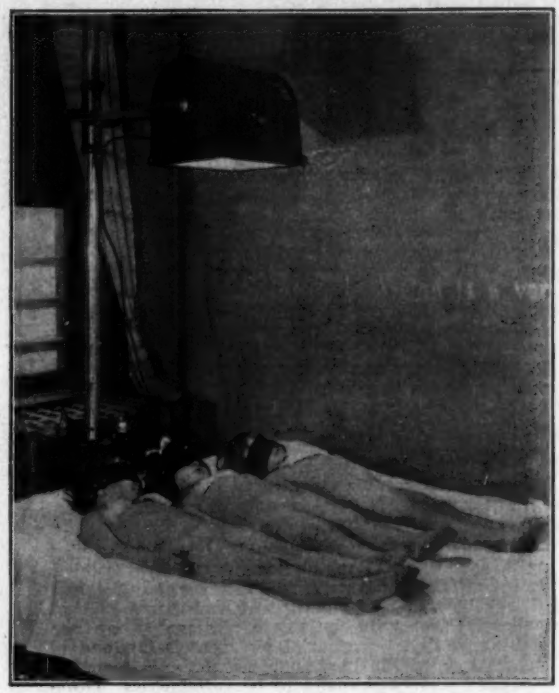

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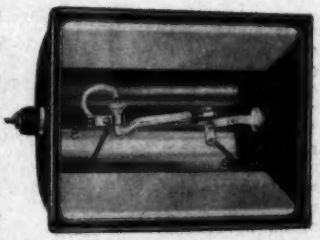

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imum of 99.2 on the seventh day. The skin also gradually improved, some lesions entirely drying up. On the eighth day, the temperature reached 101, on the ninth it was 102.6, when she was given another dose of sulpharsphenamine for the tonic effect of the arsenic. The temperature rose to 104.2 and gradually came down through the night. The following morning, the child seemed to be in a stupor; it had subnormal temperature, irregular respiration and imperceptible pulse. Intraperitoneal injections of 100 c.c. of normal saline were given, also other stimulants, but to no avail. Necropsy was refused.

Pemphigus neonatorum is a highly infectious disease of the skin, characterized by numerous large thin blobs. These blobs usually show staphylococcus on culture.

It was described as early as 1610 by Forastus. Krause reported several epidemics in 1773. It is more often seen in hospitals where large numbers of new-born are cared for. It occurs in two types, the benign and malignant. The benign type is much more common. It usually develops between the third and eighth days and is characterized by the sudden appearance of vesicles or blebs, occurring more commonly in the groin, axilla and on the neck, also on the back of the hands. The palms of the hands and soles of the feet are usually exempt. The benign cases usually clear up in from three to six weeks. The malignant cases develop more rapidly, involve a much larger area with grave constitutional symptoms and high fever, and are usually fatal.

Treatment: All cases should be kept under strict isolation. The nurses should use rubber gloves, strong antiseptics and never handle any other baby while taking care of such cases. Local applications of mild antiseptic ointments—one per cent ammoniated mercurial ointment being one of the best. In the malignant cases, no form of treatment has been found to be satisfactory. Three types of treatment were tried on this case, the ammoniated mercurial ointment, one per cent neutral acriflavin diluted five times, and a calomel boric acid powder. No marked difference could be noticed in these different treatments. The powder treatment seemed to be better in the latter stages as the lesions were drying up. This case was not a typical pomphrigus as it, no doubt, began in utero. The involvement of the sole of one foot and the palms of the hand was unlike pemphigus. Its appearance was more like congenital syphilis of the bullous type, so sulpharsphenamine was given in spite of negative Wassermann on both mother and child. The finding of pure staphylococcus in the blebs helped to rule out syphilis.

The exact cause of death could not be explained because there was an improvement of the skin lesions. Many were drying up and no new ones were forming. It did not seem that the sulpharsphenamine could have been a factor as the first dose did not cause any reaction, and the second dose, given eight days later, was a much smaller dose, and should not have caused the severe reaction that came the day before death.

Question: Was blood culture made? Ans.: No.

Question: Was there a urine examination? Ans.: There was none.

Dr. Clohessy said that this was a case of pemphigus neonatorum; he said that in an epidemic in New York it was found that the infection was being carried both by the mother and the nurses, probably a blood infection with staphylococci; he wondered if this case could be such.

Dr. Sharp said he often wondered why we do not have more infections when we consider the number of infected cervices through which the babies have to come. Recently a woman who had

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acute tonsillitis was confined and the baby came with no infection.

Dr. Berger said that in a true pemphigus no bacteria can be found in the blebs. He believed in this case the arsphenamine should not have been given. He asked if crusts formed on any of the lesions.

Dr. McIntyre said because of the many infections developing in maternity wards, investigations have been made as to the value of antiseptics and it was found that two per cent gentian violet was more effective than any other.

Dr. Sharp said that he recently had seen a baby with the infection in which 50 per cent alcohol was used.

Dr. Clohessy said he believed saturated boric acid as good a disinfectant as any other one.

Dr. O. H. Brown said he could not be convinced that there were not allergic phenomena present with this baby. He said that the condition of the leg reminded him of an angino-neurotic edema which is now known to be allergic in nature. The fact that the death followed the second dose of arsphenamine when the baby appeared to be doing well may support this suggestion.

Dr. Jordan said that there were some slight crusts over the lesion, but they were very thin. He said the proper diagnosis of this is empetigo but is called pemphigus.

ORVILLE HARRY BROWN, Secy.

(Continued next issue)

MEDICAL PROFESSION OF WESTERN HEMISPHERE TO CONGRESS IN HAVANA

The next congress of the Pan-American Medical Association will be held in Havana, Cuba, from December 29, 1928 to January 3, 1929. The program which is being arranged by the President, Dr. Fred H. Albee of New York City, will be a strong one, and will include four orations, upon the subjects of surgery, medicine, pediatrics, and tropical medicine.

Dr. William J. Mayo will give the oration on Surgery, and Dr. Lewellys Barker of Johns Hopkins University the oration on Medicine. Papers will be read in both Spanish and English.

This congress will be representative of the medical profession of the entire Western Hemisphere. Chapters of the Association have been and are being organized in various centers of North America and Central America, as well as in the Antilles, all of which will be represented at the Congress.

One of the recent accomplishments of the Pan-American Medical Association is the establishment of the Pan-American Hospital in New York City for the benefit of the Latin-speaking people.

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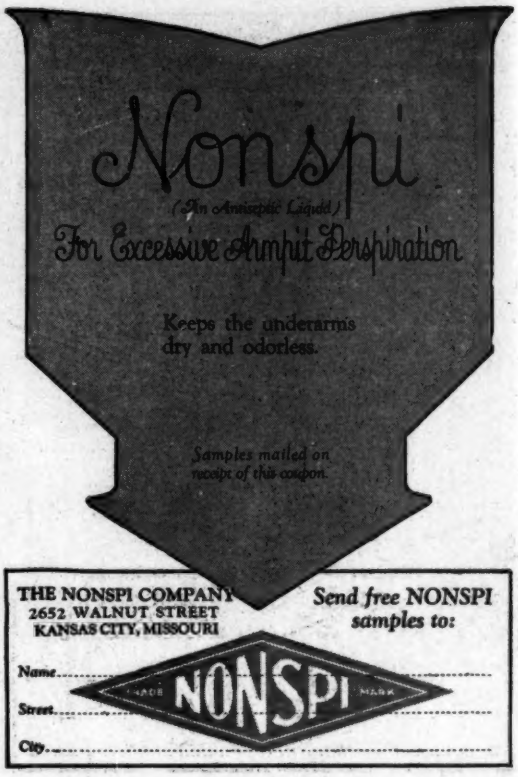

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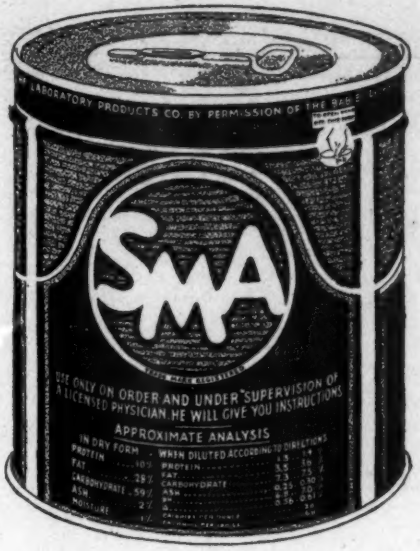
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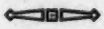

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